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American Pharmaceutical Association

Practical Pharmacy Edition

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Washington Views

Medicine, pharmacy, public health, insurance, industry, and labor were represented on an ad-hoc committee which met Nov. 20 with Public Health Service officials to discuss all aspects of the forthcoming National Health Survey.

Dr. Forrest E. Linder has been named director of this new Public Health Service survey to determine the nature and extent of illness and disability in the population each year. The last previous survey of this type was in 1936.

The Committee on Status of Pharmacists in Government Service met in Washington, D.C., Nov. 18 and 19, to determine committee organization and policy. A special sub-committee headed by E. M. Josey will make a survey of the pharmacists drafted into the Armed Forces to determine the appropriateness of their military assignments. Chairman F. Royce Franzoni presided.

Roswell B. Perkins, Assistant Secretary of the Department of Health, Education and Welfare, has resigned to resume private law practice.

Dr. Martha M. Eliot has relinquished her post as Chief of the Children's Bureau of HEW to accept a professorship in the Harvard University School of Public Health.

The Office of Education estimates that 2,957,227 students are taking credit courses in the nation's colleges and universities this fall, a gain of 8.7% over last year.

The first dividend in 25 years ($1,000,000 to 20,000 policy holders) will be paid in 1957 to holders of 5-year term U.S. Government Life Insurance which originated in World War I.

Interstate movement of nearly all cattle comes under Federal control starting January 1, 1957 to curb the spread of brucellosis (Bang's disease).

The Public Health Service has announced 44 five-year research fellowship awards costing $500,000 to scientists in 29 universities and medical schools in 20 states, D.C., and Canada.

Dr. Edward D. Freis of the Veteran's Administration, Mount Alto Hospital in Washington, D.C., is coordinator of a VA study aimed at determining how well newer drugs (reserpine, hydralazine, pentolinium tartrate, chlorisondamine chloride, and

. . . and last-minute news

mecamylamine hydrochloride) control high blood pressure and whether they can prevent hardening of the arteries, heart attacks, strokes, and other complications of the disease.

Approximately one-tenth of all people living in large cities in the U.S. are mentally ill, exclusive of mild mental or personality afflictions, according to a conservative estimate of the American Public Health Association.

The American Cancer Society reports that basic relationships between cigarette smoking and lung cancer have been clearly established as a result of a study begun in 1952 and covering 188,000 men between the ages of 50 and 70, but the National Cancer Institute of the U.S. Public Health Service blames lung cancer on air pollution rather than smoking.

The Newton-Wellesley Hospital was recently fined $500 after being convicted of violating state regulations that hospitals keep poison and external medicine in separate pharmaceutical sections, after two patients died of sodium nitrite poisoning.

Abbott Laboratories trading stamps suits against Drug Fair, Inc., and People's Service Drug Stores, Inc., Maryland, were dismissed when defendants agreed not to issue stamps unless the value of the stamps is added to the Abbott fair trade price.

New-born infants may soon be getting a single "quadruple" injection of diphtheria, tetanus, whooping cough, and Salk vaccine each time they are "shot" to protect them against these major diseases.

A Batten, Barton, Durstine, & Osborne survey reveals that 24% of housewives who save trading stamps have switched patronage from one store to another to take advantage of a premium-credit plan.

Teen-age venereal disease infections are estimated at about 200,000 per year. In California, Illinois, and Michigan, gonorrhea in 10- to 19-year olds has increased steadily in the past 4 years.

Some 3,000,000 houses in the malarious areas of Mexico will be sprayed starting January 1, 1957, in the largest undertaking of its kind ever attempted in this hemisphere, in an attempt to wipe out mosquitoes which transmit malaria.

LETTERS

Education Issue

Sir:

I was delighted to read Roy A. Bowers' excellent article concerning the Student Section [THIS JOURNAL, October 1956, p. 664]. I can fully appreciate the importance of this "nucleus" in such an organization. I sincerely hope that more students become interested in the activities of the Section. Whether or not they realize it, they constitute the "core" of the AMERICAN PHARMACEUTICAL ASSOCIATION, and the future of the profession depends on their actions. Sp-3 Harold B. Sparr

Former Secretary-Treasurer

Van Nuys, Calif. *Student Section, A.Ph.A.*

Sir:

The "Education Issue" of the A.PH.A. *Practical Pharmacy Edition* was extremely fascinating. In reading the colleges of pharmacy resumes, I noticed a very peculiar thing. The West is so very far ahead of the East in its concept of pharmacy education, despite the historical fact that the East was geographically the cradle of American pharmacy. It seems that the 5 year course is already obsolete and that the 6 year program is alone justified in developing modern pharmacists. Thomas J. Kelly

Baltimore, Md. *Shelden Pharmacy*

"Internship"

Sir:

I thought Dr. Louis Busse's article in the Practical Pharmacy Edition ["A Philosophy of Internship Programming," July 1956, p. 459] was very interesting. I do wish, however, that the word "internship" would be applied only to experience after graduation and that some other word could be found for other types of experience.

Since the word was established for that purpose, I do not see why pharmacists have to devalue it to fit the minimum situation.

Cleveland, Ohio EVLYN GRAY SCOTT

"Proprietary Names"

Sir:

I consider the A.PH.A. Manual No. 102 titled *Proprietary Names of Official Drugs* to be an excellent compilation, and I wish to make it available for my students as a reference for their senior courses.

The AMERICAN PHARMACEUTICAL ASSOCIATION has compiled a very special service to the pharmacy profession in this manual and the ASSOCIATION is to be commended for its excellent work at all times.

FRED G. DRUMMOND, Ph.D.

Boulder, Colo. *Associate Professor*

Sir:

I would like to take this opportunity to express my appreciation of the JOURNAL. Although I am working in an Army pharmacy, it is my sole source of information regarding new proprietaries. I would like to ask you and the ASSOCIATION to continue in your efforts to increase the professional recognition of registered pharmacists by the Armed Forces. I can say from personal experience (much to my regret) that there is much to be done about this problem but I believe that we can some day provide a better level of recognition for ourselves. However, to accomplish this will require constant attention and devotion to the problem.

New York, N.Y. PFC. LAWRENCE A. WYSOCKI

Dispensing Physician

Sir:

I am a newcomer to the Student Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION, having entered the University of Arkansas School of Pharmacy just this semester. I am indeed proud of my membership and I am taking opportunity now to put this membership to advantage.

I recently encountered a situation that, in my opinion along with the opinions of several people with whom I have spoken, definitely needs to be corrected.

We have a physician practicing in the community in which I live during the time school is not in session who has become a dispensing physician. As a result of this maneuver on his part, two drug stores in the community have been forced to go out of business. Now, this particular community is in the northeastern part of Arkansas where there are relatively few physicians and even fewer drug stores, and it is a great detriment to the community when one of the drug stores has to go out of business.

I have nothing against this doctor or any other physician as far as his practice of medicine is concerned. However, I am definitely against his practicing pharmacy and am of the opinion that such practices, wherever thay may be, should be stopped.

It is most discouraging for young people interested in pharmacy to see such things as this happen and it certainly is detrimental to the profession.

Pharmacy and the practice of medicine are two separate and distinct professions and it is illegal for pharmacists to practice medicine, so why shouldn't it be so for doctors and their practice of pharmacy? At least, it should be discouraged by the ethics of the profession of medicine.

Little Rock, Ark. JOE BOWEN

On Poisons

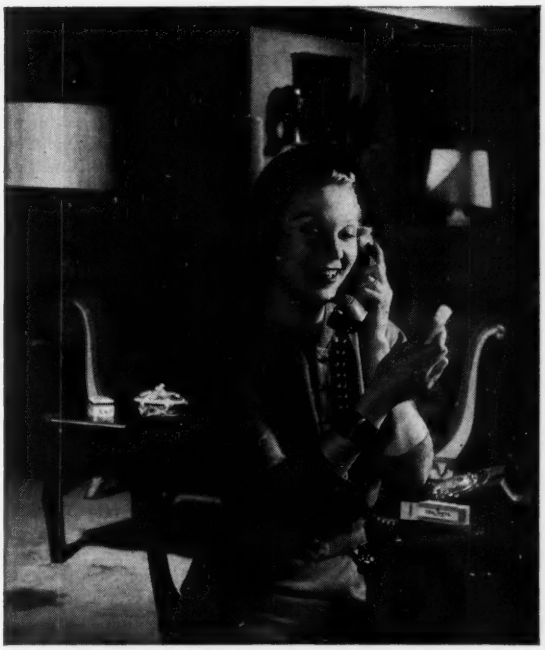
Sir:

After reading about the astounding number of accidents which occur in the home by mistaken identity of medicine bottles, I believe that fatalities could be greatly reduced if there were a standard color for *all* bottles which contain poison. Although the "skeleton" should be a sufficient reminder, it does not prove to be the case.

One of the chain drug stores where I trade uses the same color glass bottles for all medicines, and I almost made a mistake when I woke during the night (in fact, I was only half awake) and picked up the wrong bottle.

If, say, green glass meant only poisonous contents, the color would become synonymous with "danger." It seems to me that in former days the "black bottle" had just that significance, hence a black bottle would be a warning.

Washington, D.C. MRS. FLORA ABRAMS



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News *and* Notes . .

ASSOCIATIONS

National Wholesale Druggists' Association's new officers and members of the Board of Control elected at the 82nd annual meeting are (left to right): Joe Brizz, Jack McMaster, Ed Polanis, H. C. VanArsdale, Carl F. G. Meyer III, Roy Schwab, and Richard L. Hanson.

American Association for the Advancement of Science—Section on Pharmacy—The second symposium of the Committee on Cosmetics will be presented December 27 at the Statler Hotel, New York City, with *Dr. John E. Christian* of Purdue University School of Pharmacy making the introductory comments.

American College of Apothecaries announces a pilot study to determine consumer reaction to drug product labeling. National Analysts, Inc., will begin the pilot study immediately and the over-all survey is scheduled to be ready within 3 months.

American Pharmaceutical Manufacturers' Association award for 1956 goes to *Dr. William G. Lennox* of Harvard Medical School for his researches in drug therapy in epilepsy.

Health News Institute—The scope of pharmacy's new public relations organization is indicated in the 9 operating subcommittees whose formation was announced November 8 by *Chet Shaw*, Executive Director:

Films, Radio, TV: *G. Fred Roll*, Smith, Kline & French, Chairman; *Leo Brown*, American Medical Association; *W. E. Sawyer*, Johnson & Johnson. **Aid to Pharmacy:** *Edgar S. Bellis*, National Association of Retail Druggists, Chairman; *Robert E. Abrams*, American College of Apothecaries; *Charles C. Rabe*, AMERICAN PHARMACEUTICAL ASSOCIATION; *Thomas J. Vratny*, State Pharmaceutical Association Secretaries. **Fact Book:** *Wallace S. Sims*, Pitman-Moore, Chairman; *William Bayliss*, H.N.I.: *T. E. Jennings*, Merck: *George Straayer*, Schering; *Douglas Withington*, Wyeth. **Booklets & Pamphlets:** *Charles H. Prout*, Mead Johnson, Chairman; *C. F. Baker*, Burroughs-Wellcome; *Ira Contant*, Hoffmann-LaRoche; *John Irwin*, Hynson, Westcott & Dunning; *H. A. Summer*, Eaton. **Schools & Colleges:** *James R. Beattie*, Ciba, Chairman; *John Baruch*, Warner-Chilcott; *Paul Stessel*, Lederle; *Gerald C. Wollan*, Baxter Laboratories. **Recruitment of Scientific Personnel:** *George Weiler*, Pfizer, Chairman; *Wade Arnold*, H.N.I. public relations counsellor; *Rhys Jones*, Abbott; *James Macwithey*, Bristol Myers. **Professional Liaison:** *F. Modrall*, Lilly, Chairman; *Leo Brown*, American Medical Association; *Daniel S. Schechter*, American Hospital Association; *John C. Gauntlett*, Upjohn; *James V. Shannon, Jr.*, Squibb; *R. G. Sickels*, Parke Davis; *Dr. Robert P. Fischelis*, AMERICAN PHARMACEUTICAL ASSOCIATION. **Pharmaceutical Liaison:** *Dr. Howard A. Prentice*, The Proprietary Association, Chairman; *Harry A. Kimbriel*, National Wholesale Druggists' Association; *Ray C. Schlotterer*, Federal Wholesale Druggists' Association; *Carl Willingham*, National Association of Chain Drug Stores. **Ideas & Development:** *Robert A. Hardt*, Hoffman-LaRoche, Chairman; *James W. Irwin*, Searle; *Dan Rennick, The American Druggist*; *Dr. Robert L. Swain, Drug Topics*; *Dr. Robert P. Fischelis*, A.PH.A.; *David A. Ehrlich*, McNeil Laboratories; *T. E. Jennings*, Merck.

National Foundation for Infantile Paralysis—*Dr. Thomas M. Rivers*, former Vice President of the Rockefeller Institute for Medical Research, has been appointed Medical Director to succeed *Dr. Hart E. Van Riper*. The latter becomes Medical Director of Geigy Pharmaceuticals.

National Wholesale Druggists' Association elected *Carl F. G. Meyer 3rd* its President at the 82nd annual meeting. Mr. Meyer, who is President and General Manager of the Meyer Brothers Drug Company of St. Louis, is the fourth member of his family to head the Association. His grandfather, uncle, and father served as presidents.

New Jersey Pharmaceutical Association—During Diabetes Detection Week, New Jersey's more than 1,800 pharmacies distributed leaflets to each patron in a campaign to identify some of New Jersey's 50,000 unknown diabetics.

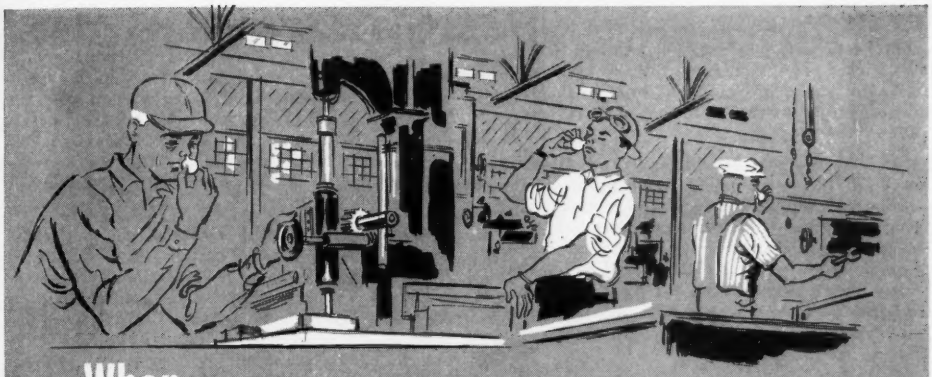
Oklahoma State Board of Pharmacy—*Charlie Switzer*, Oklahoma's "grand old man of pharmacy," was honored last month on his retirement as a Board member with presentation of a plaque. Mr. Switzer, 78, is still active as a pharmacist at the Bess Drug Store, McAlester. Next year will mark the golden anniversaries of Oklahoma's admission to the Union, the founding of the State Pharmaceutical Association, and of Mr. Switzer's marriage. *Deane D. Raley* of Tulsa succeeds Mr. Switzer on the Board.

Pennsylvania State Board of Pharmacy—*Dorothy Whalen Williams*, owner of the Whalen Drug Store, Mahanoy City, Pennsylvania, has been appointed to to the Pennsylvania State Board of Pharmacy.

Plant Science Seminar—New officers elected at the 33rd annual Seminar are: Chairman, *Dr. Harold Bailey*, Detroit, Mich.; 1st Vice Chairman, *Dr. Arthur Schwarting*, Storrs, Conn.; 2nd Vice Chairman, *Edson F. Woodward*, New York, N.Y.; Secretary-Treasurer, *Dr. Frank L. Mercer*, St, Louis, Mo. Next year's Seminar will be held in Canada in connection with the 50th anniversary meeting of the Canadian Pharmaceutical Association.

Texas Pharmaceutical Association—*Max Roesch*, Executive Secretary, spoke to freshman and junior pharmacy students of the University of Texas on "What Is All This Talk about Associations?"

Dr. Richard H. Barry (left) has been named Vice President and Scientific Director of Union Pharmaceutical Company, a Schering affiliate. James C. Scheller (center) has become Advertising Manager for Maltbie Laboratories. H. Boris Burns (right) is the new Chairman of the Board of U. S. Vitamin Corp.



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COLLEGES

Philadelphia College of Pharmacy and Science—The Breyer Ice Cream Company has established a freshman scholarship valued at $450. Applications must be received by the College before June 15, 1957.

St. Louis College of Pharmacy and Allied Sciences—*Dr. George F. Reddish*, Professor of microbiology and public health, has been awarded the 1956 Achievement Award of the Chemical Specialties Manufacturers' Association. In the large body of his published work, Dr. Reddish is perhaps most widely known as editor of *Antiseptics, Disinfectants, Fungicides, and Chemical and Physical Sterilization*, published in 1954 as the first comprehensive compilation in the field.

University of Buffalo—A day-long hospital pharmacy seminar sponsored by Pfizer Laboratories in cooperation with the School of Pharmacy and the Western New York Branch of the American Society of Hospital Pharmacists heard *Paul Parker*, A.S.H.P. President, speak on "The Road Ahead for Hospital Pharmacy." It is hoped that this year's seminar, which included orientation in state pharmacy laws and new drug therapies, will be the forerunner of an annual event.

University of Connecticut—Smith, Kline & French Foundation is sponsoring the appointment of *Gerald J. Jackson* to a 2-year fellowship to work on a research problem in pharmacy under the supervision of *Dr. Donald Skauen*.

University of Michigan—The annual College of Pharmacy refresher course for retail pharmacists, held October 24 in cooperation with the Michigan Branch of the A.PH.A. and the Washtenaw County Pharmaceutical Association, summarized the newer medications in dermatology, advances and retreats with antibiotics, physiological considerations in the use of adrenal cortical steroids, and modern compounding procedures. *Dr. W. Paul Briggs*, Executive Secretary of the American Foundation for Pharmaceutical Education, and *Dan Rennick*, *American Druggist* Editor, were guest speakers at the banquet.

University of Southern California—The Pharmacy Alumni Association held a series of 3 all-day pharmacy seminars at Reno, Nev., September 16, Fresno, Calif., October 21, and San Francisco October 28. The closely interrelated programs on the newer drugs and biologicals, on obesity, steroid hormones, ointment bases and electrolytes, ended with *Dean Alvah G. Hall* and *Prof. Edward S. Brady* sharing delivery of the talk on "The Pharmacist's Responsibility."

University of Texas—*Dr. Henry M. Burlage*, Dean of the College of Pharmacy, and *Dr. James R. D. Eddy*, Division of Extension Dean, have originated a program emphasizing mental health as related to management, patients and relatives, dispensing of tranquilizing drugs, and the role of the pharmacist, to be presented in a series of seminars under the Extension Service. The Hogg Foundation for Mental Hygiene has provided a grant to be used for the 1956–57 consultant-speakers. . . .The 9th annual hospital pharmacy seminar is scheduled for January 26–27, 1957, at the College of Pharmacy.

University of Wisconsin—The 1956 Pharmacists' Institute was held at the University November 8–10 and included discussion of the tranquilizing drugs, practical panels on operating pharmacies, and study of new techniques in prescription preparation, including information on microfilming.

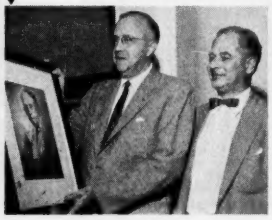
William Douglas McAdams Fellowship directed toward preparing the graduate student for a career in the pharmaceutical industry has been awarded to *Robert F. MacNally 2nd* for two years of study at the Harvard Business School. Mr. MacNally majored in chemistry at Dartmouth.

GOVERNMENT

Bureau of Standards—The platinum-iridium bar that is used as the U.S. standard of linear measurement was recently checked by the U.S. Bureau of Standards against the international standard at Sèvres, a suburb of Paris, France. Bureau Director *Allen V. Astin* announced that no discernible change in its length had occurred since the bar was prepared in 1889. Twenty-nine other governments have replicas of the standard that is kept in Paris.

◀ *University of Michigan's Dean Tom D. Rowe accepts a portrait of Dr. Albert B. Prescott, first Dean of the College of Pharmacy, as a gift from Parke Davis, whose George A. Bender is on right.*

University of Florida's Dean Perry A. Foote holds a portrait of the Hon. Ernest Berger, 82, pioneer of the pharmaceutical profession in Florida, presented by Ben Saks (r.) of Rho Pi Phi for the University's Hall of Fame.



Holland's Henny Ybema (left) 26-year-old exchange student on a 10-week visit, receives a copy of the Delaware and Memorial Hospital's Formulary from Robert Simons, Memorial's Pharmacy Director.

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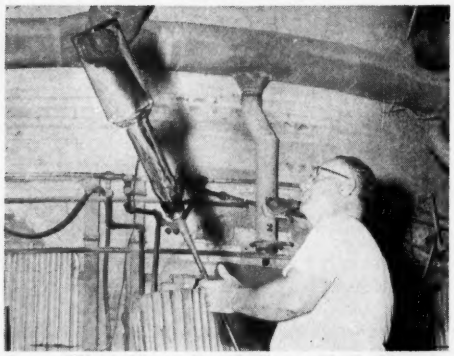

Owens-Illinois blower Joseph Ney molds the king-size ampul at the Kimble plant in Vineland, N.J., destined as the "Time Capsule" for the centennial of the Mid-South Fair in Memphis, Tenn. The capsule is 25" tall, 6" in diameter and contains nearly 3,000 microfilm frames portraying life in Memphis and the Mid-South today, some documents, and tape recordings.

HEW—The first two contracts for cooperative educational research under a recent Federal appropriation of $1,020,000 were awarded to Indiana and Vanderbilt Universities. Indiana will study the reasons why only one-fourth of the top 10% of the state's high school graduates in 1954–55 entered college. Vanderbilt University's project is a three-year study of the causes of juvenile delinquency among grade school children.

Federal Civil Defense Administration has developed a new course to explain the role of civil defense in natural disasters to state and local civil defence officials.

National Academy of Sciences–National Research Council—The James Picker Foundation has made available a limited number of Grants for Scholars in Radiological Research to institutions for support of a specific research program offering promise of improvement in radiological diagnosis, also fellowships and grants for scholars directed toward radiological diagnosis or treatment.

U. S. Court of Appeals in Los Angeles decided on November 26 that the United States District Court has *no* jurisdiction to order price restitution with respect to a product found to be adulterated or misbranded in violation of the Food, Drug, and Cosmetic Act. The higher court ruled that such jurisdiction must be expressly authorized by Congress.

Wallace Laboratories' Dr. Frank M. Berger (center) and Dr. Julian Huxley, famous British biologist (left), smile as Aldous Huxley, author of "Brave New World," seems to ruminate one of the epigrams for which he is noted. A conference on Miltown at the New York Academy of Sciences heard the author discuss the historical and philosophical aspects of tension.

INTERNATIONAL

Argentina—The Pan American Zoonoses Center, first to be devoted to the study and control of diseases acquired from animals on the international level, was signed into existence August 10. The Center, situated in Azul, about 180 miles south of Buenos Aires, is financed by World Health Organization and Pan American Sanitary Bureau funds.

Bureau of Foreign Commerce—A Salk vaccine export quota of 7,000,000 cc. has been announced by the U.S. Department of Commerce for the fourth quarter. Third quarter total licensed for export was 1,474,522 cc., going on a priority basis to Argentina, Belgian Congo, Brazil, Costa Rica, Cuba, Guatemala, Iceland, Israel, Norway, Panama, Paraguay, Uruguay and Venezuela.

Federation Internationale Pharmaceutique—The Press and Documentation Section of the International Pharmaceutical Federation met in Paris October 5.

Israeli Pharmaceutical Association's President, *Dr. Yoshua Kohlberg*, addressed the Alpha Zeta Omega convention of Western chapters which met at the University of Pittsburgh School of Pharmacy October 27–28.

Korea—*Dr. Chyull Woong Park*, President of Cho-Sun University, Kwang-Joo, Korea, and Director of U.N. Association of Korea, Seoul, visited A.PH.A. Headquarters on November 14.

NATO—*Dr. John M. Whitney*, Director of the Health Office of the Federal Civil Defense Administration, has been appointed U.S. delegate to the North Atlantic Treaty Organization Medical Com-Committee.

MANUFACTURERS

Abbott Laboratories—*Herbert S. Wilkinson*, Vice President and Director of Sales, has been named the program chairman for the 1957 fall conference of the Northwestern University Institute for Management. . .Abbott has won its Sucaryl trade mark infringement suit againt Imperial Process Co. of East Springfield, Ill., manufacturers of Sucreme.

American Cyanamid Company reports the successful application of the antibiotic preservation process Acronize to commercial turkeys. Previous commercial use since the FDA clearance of Acronize for use on poultry of November 1955 has been almost entirely on broilers.

Ames Company—*Charles F. Miles* has been elected Chairman of the Board and Chief Executive Officer; *George W. Orr, Jr.*, succeeds *Walter R. Beardsley* as President; *Edward L. Miles* has been elected Vice President for Marketing, and *Charles J. Kalt* is the new Advertising Manager.

Arner Company is cooperating with the University of Buffalo in a training program whereby undergraduate chemistry students work 30 hours weekly at regular pay rates in a special night shift. In

New with plenty of profit-potential

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TRADEMARK

A METABOLIC REGULATOR

to boost metabolism during middle-age slowdown

BOUND TO BE A PROFIT-MAKER

PLESTRAN restores muscle tone, vigor and a sense of well-being in 7 to 10 days

A POTENTIAL MARKET OF MILLIONS OF PATIENTS

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Ethinyl estradiol	0.005 mg.
Methyltestosterone	2.5 mg.
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THE PLESTRAN PROFIT PICTURE

	Your Cost	Fair Trade Minimum	Your Profit
100s	$ 2.75	$ 4.59	$ 1.84
500s	11.00	18.33	7.33

Better order today from your wholesaler!

WARNER-CHILCOTT

100 YEARS OF SERVICE TO THE MEDICAL PROFESSION

another training program, students of Erie County Technical Institute spend alternate 3 month periods at school and in Arner's technical laboratories.

Bard Pharmaceuticals—*E. Richard Memoli* has been named Vice President and General Manager of the Yonkers concern. Mr. Memoli, an A.PH.A. member, is a graduate of Fordham University College of Pharmacy.

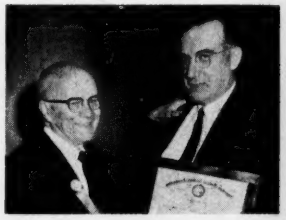
Endo Laboratories officers and branch managers met recently in New York City for their annual 3 day conference.

G. F. Harvey Company—*Andrew L. Johnson* has been named Advertising and Sales Promotion Manager.

Lederle Laboratories has recently completed a new 70,000 square ft. plant employing some 200 Mexican nationals near Mexico City.

Eli Lilly and Company announces that *Dr. Robert C. Pittenger* has been named Manager of Antibiotic Development. Rising demand for antibiotics is resulting in a $2,000,000 increase in their fermentation facilities at the Tippecanoe Laboratories.

Johnson & Johnson's Vice President for Research, Dr. William H. Lycan (right), presents Dr. Walter C. Alvarez, famous consultant and Editor of Modern Medicine Magazine, to 300 J&J executives assembled to hear Dr. Alvarez on "The Health of Executives."



Eaton Laboratories' Advertising Manager, Dr. Rolland J. Main (right), former medical editor, is congratulated by Dr. R. N. Hewitt, President, American Medical Writer's Assoc., on being elected a Fellow.

Kimble Glass Company—The 1956 Kimble Methodology Research Award has been made to two U.S. Public Health Service scientists: *Drs. Philip R. Edwards* and *William H. Ewing* for techniques developed in the identification of bacteria causing food poisoning.

McNeil Laboratories is sponsoring a research project at the Philadelphia College of Pharmacy and Science to evaluate a series of McNeil compounds for potential cardiovascular activity.

Merck & Co. announces that it will begin marketing sorbitol solution shortly. The first product will be a 70% aqueous solution with other forms to follow.

Monsanto Chemical Company—November 28, 1956, marked the production of Monsanto's 100,000,000th pound of aspirin. The company is the world's largest producer of the compound and was its first independent producer in the U.S., beginning in 1917.

Norwich Pharmacal Company's *Paul C. Wieseman*, Chief Pharmacist, spoke before the students of the University of Minnesota College of Pharmacy on a speaking tour that included South Dakota State College, North Dakota Agricultural College, and the Abbott and Northwestern Hospitals in Minneapolis.

Parke Davis & Company—*H. H. Goltz*, General Manager of the Buenos Aires branch, visiting the parent company in Detroit, noted the progress of medical science in Argentina, including a "very well organized and extensive poliomyelitis immunization program." The branch, established in 1915, is Parke Davis' oldest in South America.

S. B. Penick & Company combined with the New York Quinine and Chemical Works, Inc., in a recent week-long meeting for their sales representatives at which "brainstorming" sessions were an innovation (see THIS JOURNAL, August, p. 535).

Pharmaceuticals, Inc.—President *Matthew B. Rosenhaus* was chairman at the 60th anniversary celebration of New York City's Home and Hospital of the Daughters of Jacob, one of the nation's oldest institutions devoted to the care of the aged.

Schering Corp.—A new experimental psychology section under *Francis Mechner* will study the psychological effects of new drugs on laboratory animals. . . . The new $1,500,000 Schering Biological Research Building will be ready for occupancy about the first of the year.

Smith-Dorsey—*Dr. Carl J. Klemme* has been appointed Director of Pharmaceutical Research and Development. Dr. Klemme is a former Professor of Pharmacy at Purdue University and St. Louis University and comes to Smith-Dorsey from the Central Pharmacal Company, where he was Director of Research.

Squibb—The campaign to keep vitamin business in the pharmacy has taken the form of book matches reminding the consumer that his pharmacist is his qualified representative for dispensing health products.

Upjohn Company will build a new plant near Sydney, Australia, to be ready for occupancy in January 1958. This is Upjohn's fifth international subsidiary, the others operating in Canada, Mexico, Brazil, and Great Britain.

G. D. Searle & Co. begins manufacturing operations in Great Britain in its new laboratory 30 miles west of London.

Warner-Chilcott Research Laboratories—*Dr. A. Wayne Ruddy*, Director of Chemical Development, has been elected Chairman of the American Chemical Society's Division of Medicinal Chemistry for 1957.

Warner-Lambert Pharmaceutical Co. has acquired Nepera Chemical Co., Inc. *William S. Lasdon*, Nepera President, will become a director of Warner-Lambert and member of its Executive Committee. President of the New Nepera Division will be *Milton S. Lasdon*.

Winthrop Laboratories' "Top Dog" Award for outstanding performance in its medical research department during 1956 was made to *Shepherd M. Crain*, research attaché in the Boston area, during Winthrop's 3-day medical research conference.

5 aids

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to better health—five ways to increase sales

ABDOL® WITH MINERALS CAPSULES
for prevention and treatment of vitamin-mineral deficiencies
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COMBEX® KAPSEALS®
for prevention and treatment of vitamin B complex deficiencies
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vitamin-mineral supplement for the older age group
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comprehensive nutritional aid for use in prevention of and treatment for vitamin-mineral deficiency states
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Bottles of 4 ounces and 16 ounces.

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STUDENT & LOCAL BRANCHES

LOCAL BRANCHES

Chicago Branch—"Public Relations and the Pharmacist" was the subject discussed at the November 7 meeting by panelists (seated left to right) George Scharringhausen, Jr., Louis Zahn (moderator), Edward Keating, and Arthur C. Emelin; (standing left to right) Dave Allen, Howard Stephens, and Sam Armsworth.

City of Washington—The Branch held its November meeting on the eve of the First Interim Meeting of the A.PH.A. House of Delegates. *Dr. Glenn Sonnedecker* of the University of Wisconsin, who recently returned from Europe after an extended tour of study, was guest speaker. He chose as his subject "The Pharmacist and the Student in Pharmacy in West Germany."

Indianapolis Branch—"Change Creates Opportunity" was discussed by *Joseph J. Shine*, Editor of the *Central Pharmaceutical Journal*, at a meeting of the Branch on October 24.

Miami Branch—At the September 27 meeting an officer of the Dade County Office of Civil Defense spoke on "The Part the Pharmacist Will Play in Civil Defense." At the October meeting the following officers were elected to serve the Branch: *Mary Wernersbach*, President; *Carl Dell*, Vice President; *Jack Davis*, Secretary-Treasurer.

New York Branch—The October meeting, held at Columbia University College of Pharmacy, was addressed by *Jack Kaplan*, pharmacy proprietor, and *Paul Parker*, Director of the A.PH.A. Division of Hospital Pharmacy and President of the A.S.H.P. The general theme of the meeting was "Public Relations for Retail and Hospital Pharmacists." *Harold Neham*, President of the Southeastern New York Chapter of the A.S.H.P., served as moderator.

Northern New Jersey Branch—"The Pharmacist's Role in Public Life" was the subject dealt with at the November 14 meeting by *Joseph Stamler*, President of the Essex County Bar Association and counsel for the New Jersey State Pharmaceutical Association.

Northwestern Ohio—*Ben Otto*, a local representative of The Upjohn Company, discussed and illustrated with color slides the symptoms and conditions resulting from vitamin deficiencies at the October 30 meeting. Another highlight of the evening was the demonstration and discussion by *Dean Charles H. Larwood* of the University of Toledo College of Pharmacy on the detection of uranium in ore samples. The following officers were elected: *Dale L. Myers*, President; *Barbara L. Lardinais*, Vice President; *Emma Stevens Arvan*, Secretary; *Beverly Wisniewski*, Treasurer.

Philadelphia Branch—The November 8 meeting featuredan address by *Dr. Herbert M. Cobe*, Professor of microbiology at Temple University, on the subject "Dental Caries." *Dr. Arthur E. James*, Professor of chemistry at Temple University and former Fulbright lecturer at the University of Peshawar in Pakistan, spoke on that country at a dinner meeting preceding Dr. Cobe's presentation.

Puget Sound Branch—*Paul Parker*, President of the American Society of Hospital Pharmacists, spoke on "Modern Hospital Pharmacy" at a dinner meeting on October 16. *Dean J. E. Orr* of the College of Pharmacy at the University of Washington discussed "The Development of the 5 Year Course in Pharmacy." New officers installed during the meeting were *Al Hagg*, President; *Dave Irvine*, Vice President; *Cyrilla Jensen*, Recording Secretary; *Joy Plein*, Corresponding Secretary; *Ted Taniguchi*, Treasurer.

St. Louis Branch—On November 4 the Branch held a joint meeting with other pharmaceutical groups of the St. Louis area. *Spruling Clark* of Indianapolis, President of the National Pharmaceutical Association, and *W. C. Murphy*, Director of Public Relations of Eli Lilly and Company, were guest speakers. The subject of their joint discussion was "Public Relations."

STUDENT BRANCHES

Albany College of Pharmacy—*Dr. Helmuth Neuman*, head of the Steroid Division of Sterling Winthrop Research Institute, spoke on "Tranquilizers" at the October 29 meeting of the Branch.

Brooklyn College of Pharmacy—"Employment Opportunities" was discussed at the October 24 meeting by *Professor Isidore Greenberg*, Chairman of the Career Guidance Committee of the College.

Creighton University—New Branch officers for the current year are: *John M. Early*, President; *Martin Zaccone*, Vice President; *Betty L. Topf*, Secretary; *Robert L. Herek*, Treasurer. *Sebastian Pirrucello* is Faculty Advisor.

Detroit Institute of Technology—Newly elected officers are: *Merton Luce*, President; *William Webster*, Vice President; *Harold Dean*, Secretary; *William White*, Treasurer. *Prof. Henry E. Melton* and *Acting Dean J. V. Crandall* are co-Faculty Advisors.

Drake University—*Prof. J. Earle Galloway*, faculty member, was guest speaker at the October 12 meeting. He spoke on "The Challenge of Pharmacy in a Modern Day Society." *Dr. M. C. Andries* is the new Faculty Advisor of the Branch.

Duquesne University—October and November meetings were largely devoted to presentations by Branch members. Speakers and topics included:

Sylvia Bartos on "Protein Metabolism"; *Leo Einloth*, "Nilevar" (Searle); *Mervin Kendal*, "Extra Pharmacopoeia"; *Alvin Brown*, "Current Topics"; *Matthew Burns*, "Insulin and the Diabetic"; *William Bond* "Substances Used for the Oral Treatment of Diabetes." *Mabel Kopp* reviewed a book on neurochemistry; *John Moretti* spoke on "Current Topics"; *Robert Bogden*, "Arthritis"; *Nicholas Paolone*, "Treatment of Rheumatoid Arthritis"; *Donald Telasha*, "Why People See Doctors"; *Richard Smith*, "Current Topics." *Francis Craska*, *Geraldine Manzione*, and *Felix Pollice* served as "critics."

Ferris Institute—"Interprofessional Relations" was the topic of discussion between physicians *J. Halderman* and *J. Walters* and pharmacists *Richard Beadle* and *Keith Curtis* at the October 10 meeting of the Branch.

George Washington University—A.PH.A. President *John A. MacCartney* addressed the Branch at its November 9 meeting on "The A.PH.A. and Modern Pharmacy."

Howard College (Ala.)—At the October 23 meeting *Robert S. Hogan*, M.D., discussed "The Relationship Between the Physician and the Pharmacist." Dr. Hogan emphasized the importance of adequate telephone service in pharmacies since an increasing number of prescriptions are being given over the telephone.

Howard University—"The Pharmacist's Show Globe" and "Cooperation Promotes Organization" were the subjects presented by students *Celestine Rogers* and *Sylester Flowers*, respectively, at the October 9 meeting. *Donald Templeman*, President of the Branch, gave a brief summary of the history of National Pharmacy Week and the founding of the A.PH.A. *Dr. Theodore Zalucky* is Faculty Advisor.

Montana State University—*Carol Cain* was elected to fill the position of Branch Secretary at its October 9 meeting. On October 25 and 26 the School of Pharmacy acted as host to the annual meeting of District No. 7 Student Branches. *Dr. Robert Van Horne*, new Dean of the College, serves as Faculty Advisor.

Ohio Northern University—The October 10 meeting was devoted to a general information program on cancer. *Dr. B. D. Lepovetsky*, Associate Professor of bacteriology, covered the theories relative to the causes of cancer and the use of chemotherapeutics and surgery as curatives.

Ohio State University—Members of the Branch heard an informative talk on "The Detail Man and His Role in Pharmacy" at their November 2 meeting. Guest speaker was *Ray Striker*, sales representative of Eli Lilly and Company.

Oregon State College—The film "Do You Fill Prescriptions Here?" made available through the Northwest Drug Company, highlighted the October 23 meeting of the Branch. Officers for the year 1956–57 are: *Hugh Kerwin*, President; *William Hamilton*, Vice President; *Phyllis Ruiter*, Secretary; *Gayle Urfer*, Treasurer. *Dr. Daniel P. N. Tsao* is Faculty Advisor.

Purdue University—"Apprenticeship" was the topic of a panel discussion at the October 10 meeting. Faculty Advisor *Dr. Robert Evanson* served as moderator. Members of the panel were *A. F. Hook*, Vice President of Hook Drug Company; *Maurice Goodnight*, local retailer and recently appointed State Board member; and students *Lennie Simms* and *Dale Ogle*.

Southwestern State College—Oklahoma Pharmaceutical Association Secretary *Elbert R. Weaver* was guest speaker at the October 8 meeting of the Branch. Mr. Weaver spoke on "The History and Progress of Pharmacy in Oklahoma."

St. John's University—*Samuel Dreyer*, President of the New York Academy of Pharmacy, discussed "Reciprocity in New York State" at the October 23 meeting. Mr. Dreyer pointed to the high level of education in operation in all the accredited pharmacy colleges of the nation as a sound basis for reciprocity.

St. Louis College of Pharmacy and Allied Sciences—The October 8 meeting marked the kick-off of an extensive National Pharmacy Week program. *James H. Koch*, President of the Missouri Pharmaceutical Association, was guest speaker. He spoke on the need for organization in pharmacy.

University of California—Officers for the 1956–57 school year are: *Elmer Coombs*, President; *Carl Windell*, Vice President; *Nancy Wineman*, Secretary; *Beverly Howell*, Treasurer. *Prof. David D. Kendrick* is Faculty Advisor.

University of Georgia—Officers of the Branch were introduced to the members and new students at the October 10 meeting. *William Hartman*, Assistant Athletic Coach of the University, was guest speaker.

University of Illinois—The film "Do You Fill Prescriptions Here?" was shown at the October 31 meeting. Attending the showing was *William Mahoney* of the Owens-Illinois Company, co-sponsor of the film with the National Wholesale Druggists' Association.

University of Kansas—The new Faculty Advisor, *Lowell Macy*, spoke before the Branch at its October meeting. He urged all members to take an active part in this year's Branch activities. Later in the evening various standing committees were appointed and approved by the group.

University of Maryland—At the October 16 meeting *Dean Noel E. Foss* spoke on "The Purpose of Organization in Pharmacy." *John J. Sciarra*, new Faculty Advisor, talked briefly on "Reasons for Joining the A.PH.A." *Charles C. Rabe* of the A.PH.A. staff addressed the November 6 meeting.

University of Michigan—A film portraying the discovery of anesthetics was the highlight of the October 10 meeting of the Branch. *President Gordon Dowling* welcomed the members and new students. *Dr. Alex Berman* is the new Faculty Advisor.

University of North Carolina—*Byron T. Huckaby*, President of the North Carolina Pharmaceutical Association, was guest speaker at the October 23 meeting with a talk on "Types of Drug Stores." *Dr. Benjamin Cooper* serves as Faculty Advisor.

(Continued on page 813)

THE FOOD AND DRUG ADMINISTRATION

What It Is and What It Does

By the turn of the century (1900), processing of food was gradually being discontinued in the home kitchen and the village shop while more and more was being undertaken in large factories and processing plants where the housewife could not satisfy herself that the products were wholesome. Commercial food production was in its infancy—conditions in many plants were primitive by modern standards. Magazine articles alarmed the homemaker with shocking exposures of filthy, fraudulent, or dangerous products—foods dosed with chemical preservatives, candy colored with poisonous dyes, narcotic soothing syrups for babies, and the tragic consequences which followed when people believed in the cure-all promises of the "patent" medicines.

Such disclosures led Congress to pass the original Pure Food and Drug Law of 1906. Enforcement was vested in the Bureau of Chemistry of the U.S. Department of Agriculture, headed by the famous Dr. Harvey W. Wiley, who led the nation-wide crusade of the new law. In 1927 the Food and Drug Administration was established as a separate unit of the department. The original Act was completely rewritten and modernized in 1938. In 1940 the FDA was transferred from the Department of Agriculture to the Federal Security Agency, which became the Department of Health, Education, and Welfare in 1953.

The Principal job of the FDA is to enforce the Federal Food, Drug, and Cosmetic Act and thereby carry out the purpose of Congress to insure that foods, drugs, therapeutic devices, and cosmetics are pure and wholesome, safe to use, made under sanitary conditions, and truthfully labeled. The law protects law-abiding manufacturers and dealers against unfair competition by inferior or dishonestly labeled goods and also guarantees public confidence in the quality of American foods, drugs, and cosmetics.

Modern scientific methods are required to enforce this law. The FDA was one of the first of these scientific crime detection agencies and has approximately 300 inspectors in the field visiting factories and processing plants and looking for samples of products which may violate the law. Sixteen district offices are equipped with laboratories which analyze the samples. In Washington, D.C., are the research laboratories which constantly are working on the more difficult problems and devising new and better methods of analysis. The inspectors and the chemists working together obtain the evidence which is presented to the Federal Court for action. Preparation of the cases for the U.S. District Attorneys throughout the country is handled by a small legal staff in the General Counsel's office of the Department of Health, Education, and Welfare. The FDA has altogether approximately 1,130 employees.

About 1,100 actions a year are brought in Federal Court by the FDA. In the 1956 fiscal year over 7,821,000 lbs. of unfit or contaminated foods were removed from the market, or 75 tons per week. In addition to its main job of policing the purity, quality, and labeling of foods, drugs, and cosmetics, FDA's responsibilities include:

1. Enforces the law against illegal sales of prescription drugs.
2. Checks the manufacturers' evidence of the safety of all new drugs (about 40 each month) before they are put on sale to the public.
3. Checks the safety of all batches of coal tar dyes for use in foods, drugs, or cosmetics.
4. Enforces the Caustic Poison Act, which requires a "Poison" label and antidote to appear on certain highly dangerous chemicals.
5. Enforces the law against bogus therapeutic devices.
6. Tests all batches of insulin and five of the most important antibiotic drugs for purity and potency before they are sold.
7. Sets up standards which guarantee the composition and real value of food products in line with the congressional mandate to "promote honesty and fair dealing in the interest of consumers."
8. Checks imports of foods, drugs, and cosmetics to make sure they comply with United States law.
9. Cooperates with state and local officials to inspect foods and drugs contaminated by disasters, such as the New England floods in August 1955, where over 4000 plants and stores were flooded.

In a recent month FDA terminated 15 criminal cases brought against firms charged with shipping unfit foods or selling prescription drugs without a physician's authorization. In the same month the FDA seized 816,640 lbs. of unfit and contaminated foods in 66 Federal Court actions. This included 74,700 lbs. of frozen fish containing parasitic cysts and decomposed foods including 95,604 lbs. of fish, 47,910 lbs. of frozen eggs, 32,200 lbs. of garlic, and 29,000 cans of tomato juice.

A total of 12,262 factories and commercial warehouses were inspected during fiscal year 1956. Although the FDA inspection covers nearly 100,000 processing and manufacturing plants and warehouses as well as thousands of retail establishments and is responsible under the law for products costing over $62,000,000,000 annually, at this rate plants can be inspected only once in 8 years on the average and only a fraction of a percent of output can be sampled.

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STRAIGHT FROM HEADQUARTERS

ROBERT P. FISCHELIS, SECRETARY

A Highly Successful Meeting

THE Interim Meeting of the House of Delegates of the A.PH.A. held at the Willard Hotel, Washington, D.C., on November 10 and 11, provided the opportunity sought by members of the House to discuss in considerable detail some of the problems of the profession on which there is a demand for a definite expression of policy.

Under the skillful leadership of Chairman Troy C. Daniels and with recommendations contained in his opening address as a guide, the approximately 100 members in attendance, representing 36 states and all phases of the profession, provided practically every point of view on the subjects considered and adopted resolutions reflecting conclusive thinking on some topics, while leaving others for further consideration by the Council or the Committee on Resolutions on the basis of the points of view expressed.

It was the consensus of those in attendance that this first Interim Meeting was completely successful in fulfilling the objectives for which these meetings are designed. A brief account of the meeting will be found on page 800.

Health Research Grants

THE Health Research Facilities Act of 1956 authorizes the appropriation of funds not to exceed $30,000,000 for each of three years to assist in the financing of the construction of facilities for research in the sciences related to health. The act defines "sciences related to health" as including medicine, osteopathy, dentistry, and public health, and fundamental and applied sciences related thereto.

The assistance is in the form of grants-in-aid to public and nonprofit institutions on a basis of not more than 50 per cent for the Federal share. Items not creditable for matching purposes include (1) costs for the acquisition of land or off-site improvements and (2) obligations made prior to the award of the research facilities grant concerned. The Congress has made the first $30,000,000 appropriation to the Public Health Service, Department of Health, Education, and Welfare, for this program.

The question has arisen whether colleges of pharmacy are eligible to receive grants under this legislation, or whether such grants are limited to colleges of medicine and dentistry.

We have been informed that pharmacy colleges may apply for funds to provide additional research facilities through the construction and/or equipping of new buildings, or the expansion, remodeling, alteration, and/or equipping of existing buildings. Such applications will receive consideration on their merits in the same manner as applications from colleges of medicine or dentistry.

There is occasional criticism of those who look after the interests of pharmacy in matters of this kind when a bill before Congress does not specifically include reference to pharmay *per se.* As a matter of fact, the only time such legislation is limited exclusively to medicine and dentistry is when the language of the act specifically provides this. When the language is broad, as it is in this act, and "sciences related to health" is a part of the phraseology, pharmacy is usually included. It is understandable that the inclusion by name of individual sciences or professions related to health or medicine would require the naming of all, and the tendency is therefore to omit such specific references.

Colleges of pharmacy interested in making applications for funds for research facilities from the current appropriation under P.L. 835, 84th Congress, 2nd Session, should send for application forms to the Health Research Facilities Branch, Division of Research Grants, National Institutes of Health, Public Health Service, Bethesda 14, Md., not later than June 30, 1958.

Building Fund Progress

As of October 31, 1956, the combined total of contributions paid and pledged to the A.PH.A. Building Fund amount to $145,383.25.

Of this amount $116,600.00 has been contributed or pledged by the drug industry through the efforts of the committee headed by Dr. H. A. B. Dunning.

Individual contributions from about one thousand members of the ASSOCIATION, affiliated organizations, and Branches make up the balance of $28,783.25. This part of the campaign is under the chairmanship of Dr. Hugo H. Schaefer.

Thus the campaign, so far, has resulted in acquiring a little more than one-half of the funds needed for the addition planned for the building, and it is now essential that the balance be obtained as promptly as possible so that work on the new addition may coincide with the erection of the new U.S. Department of State Building to the rear of the American Institute of Pharmacy. This building program for the Department of State will greatly enhance the value of property in the section where the American Institute of Pharmacy is located and will provide a unique and unsurpassed locale for the ASSOCIATION's scientific, professional, and public health services.

Members of the ASSOCIATION who have not yet made contributions may find it very convenient for tax purposes to send in their contribution or assessment prior to the end of 1956.

In reporting on the status of the Building Fund to the House of Delegates at its November meeting in Washington, Chairman Dunning reminded the House of the following resolution which was passed at the Detroit Convention:

"Resolved, That the House of Delegates and the Council plan on seeking voluntary subscriptions to defray the cost of an addition to the present building amounting to about $275,000 and that in the event such voluntary subscriptions fail to reach the desired goal, a modest assessment be placed upon the active members of the ASSOCIATION."

National Health Survey

THE survey of the extent of illness, authorized by the 84th Congress on an annual basis, is now in the preparation stage. It is in the hands of the public health service, which has set up a special staff under the general direction of George St. John Perrott, Director of the Division of Public Health Methods. The advice of the AMERICAN PHARMACEUTICAL ASSOCIATION, among others, has been sought and provided in launching this survey.

At a meeting of a group of advisers to the survey called by Surgeon General Leroy Burney on November 20, it was pointed out that this survey had a threefold purpose. It is to determine the prevalence of illness, its nature and duration, and the amount of medical care received by those who are included in the census.

There will be a nationwide household survey of the extent of illness in cooperation with the Bureau of the Census. From now on this will be a continuing program and the procedure, methods, and extent of inquiry into the various phases of illness and medical care will be developed as the survey proceeds.

It is quite possible that valuable information on the pharmaceutical services supplied and the avenues through which it is provided will be explored as the project develops, although there is no immediate project involving the pharmaceutical phases of medical care in contemplation at present.

New Format in 1957

WITH this issue of the JOURNAL we complete seventeen years of publication of the *Practical Pharmacy Edition* in the present format.

Beginning with Volume XVIII, No 1—the January 1957 issue—THIS JOURNAL will come to you in a larger format which will provide greater flexibility of makeup and opportunity for the presentation of more material. This is in line with the ASSOCIATION's policy to present the literature of pharmacy as attractively and in as complete coverage as possible. We shall appreciate your comment and suggestions when the January number reaches you.

Season's Greetings

THE officers and members of the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION and the Headquarter's Staff at Washington, D.C., extend to all of our members and to the readers of THIS JOURNAL their best wishes for A Merry Christmas and A Happy New Year.

THE YEAR 1956

MANY important strides forward were made technically and professionally during 1956 in pharmacy and the related fields. Potent forces were at work affecting the status of pharmacists at all echelons of activity—the teachers and young graduates of the colleges, the pharmacists employed in the various industrial and governmental positions, as well as those in retail, wholesale, and hospital activities.

Although most of the unsolved problems of the profession are the same ones that have plagued it for more than 100 years, the sense of belonging to an honored profession, the feeling of accomplishment achieved through well-directed efforts, and the recognition being accorded pharmacy by the lay public are creating nationally an enthusiasm unequaled heretofore. Never have the spiritual and material returns been so great.

PHARMACY

A.PH.A. Affairs

The House of Delegates of the AMERICAN PHARMACEUTICAL ASSOCIATION was strengthened as the policy forming body of the A.PH.A. and set a precedent by having a meeting midway between the annual conventions. See pages 723 of the November issue and 800 of this issue.

A U.S. Public Health Service grant of $36,000 was made to the A.PH.A. to determine what constitutes good pharmaceutical service in hospitals of various sizes and types. Preliminary studies have been completed.

Approximately $150,000 has been collected for expansion of A.PH.A. Headquarters. Unless there is a sudden increase in voluntary contributions, assessment of the membership voted by the House of Delegates appears to be inevitable. See page 789.

Public Relations

Reports from all over the nation indicate that National Pharmacy Week during 1956 was participated in by a greater number of pharmacists than ever before in the history of this annual observance. Orders placed by pharmacists for participation aids exceeded those received in 1955 by nearly 35%. In addition to supplying copies of public addresses, radio and television scripts and announcements, newspaper editorials and ad mats, the Committee on Public Relations also distributed a TV slide to the nearly 500 television stations throughout the nation. Reports indicate that the slide, which carried the message "Keep Medicines Out of the Reach of Children," was widely used.

The success of the overall National Pharmacy Week program is attested to by Dr. Robert L. Swain, Editor of *Drug Topics*, who recently wrote: "*. . . this American Pharmaceutical Association project has become one of pharmacy's most effective public relations weapons.*"

Activity in the whole field of public relations as it related to pharmacy was accelerated during 1956. Associations, manufacturers, and specialized organizations, such as the Health News Institute, supported by the A.PH.A., actively

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promoted pharmacy in an ever-brightening light to the public and thwarted unjust criticism through carefully phrased news releases and other communications. See, for example, "Bigger than Life," page 744 (November 1956).

Improperly publicized reducing diets tremendously increased sales in dextrose and corn oil across the country, giving professional pharmacists an opportunity to give proper advice to their customers against indiscriminate use of such diets and thus prevent much of the harm that might have been done. See page 539, August issue.

The good public relations value of a number of visual aids released by the American Association of Colleges of Pharmacy and the American Foundation for Pharmaceutical Education has been demonstrated. These organizations have distributed well over 100,000 pamphlets entitled "Shall I Study Pharmacy" and have released two color and sound films entitled "Design for Life" and "Time for Tomorrow." See page 816 of THIS JOURNAL.

Professional Relations

Greater awareness of the need for abiding by long-established principles of conduct was created by the controversy over the Principles of Ethics of the American Medical Association. Alterations in the A.M.A. code condoned encroachment on the prerogatives of pharmacy and tended to encourage physician dispensing and clinic-owned pharmacies. The National Pharmacy Committee on Relations with the Medical Profession, consisting of Dr. Robert P. Fischelis, John B. Heinz, and Ronald Robertson of the A.PH.A. and John J. McKeighan, Frank Moudry, and Mearl D. Pritchard of the N.A.R.D. met with Drs. James R. McVay, James R. Reuling, George F. Lull, and C. Joseph Stetler of the A.M.A. They were successful in creating a better understanding of the problems involved. There was a distinct de-emphasis of financial gain and greater emphasis on service to human health and welfare.

Numerous surveys and public opinion polls by the Health Information Foundation, the A.M.A. and others contributed in great measure to the development of statistical information concerning the profession, how it is regarded by the public, and how well it is serving the public.

Controversies concerned with over-the-counter sales of potent drugs were quietly being resolved at the national level. The A.PH.A., its affiliate the A.C.A., and numerous dermatologists were instrumental in preventing release of hydrocortisone ointments and lotions for o-t-c distribution. See pages 584 and 586, September 1956 issue.

The numerous problems confronting the profession of pharmacy included substitution, duplication, indiscriminate sale, fair trade, legislative control, physician dispensing, restrictive sale of proprietaries, control of narcotics, self-medication, self-service, over-the-counter sale of potent medications, equality of opportunity, medical care costs, availability of poison information, fair and proportionate distribution of drugs, and many others.

Other Affairs

The status of pharmacists in the armed services was being markedly improved. See page 508, August issue.

The Food and Drug Administration celebrated its 50th anniversary. See page 506, August issue.

The Remington Honor Medal went to Frank W. Moudry, a pharmacist with an outstanding record of contributions to Pharmacy. See the front cover and page 802 of THIS JOURNAL.

Poliomyelitis vaccine became available to all. As a result, there was a very large decrease in the number of cases of the disease nationally.

Teen-age venereal disease was on the increase. See page 476, July issue.

The 84th Congress adjourned on July 27, 1956, after passing numerous bills affecting pharmacy. See page 513, August issue.

Brainstorming technics were widely applied to pharmaceutical problems. See page 535, August issue.

The plans for the forthcoming Pan-American Congress of Pharmacy and Biochemistry to be held in Washington, D.C., the week of November 3, 1957, are being carefully formulated. See page 561, September issue.

Tranquilizers reached a new high for prescription volume. Congress appropriated $2,000,000 for their intensive study in an effort to determine their long-range effects. See page 668, October issue.

RELATED FIELDS

Biological Sciences

Application of gibberellic acid caused rare-blooming and non-blooming plants to flower. Treatment with gibberellic acid and extracts from the young seed of certain plants thought to contain gibberellin-like substances was found to reverse the dwarfing effect of gene mutation.

Piperazine citrate was found to be a simple and safe preventive and cure of animal worm parasites.

Bats were found to be important reservoirs of rabies in the United States.

The chemical structure was found for sesamolin, which increases the killing power of pyrethrum 31 times.

An enzyme chemical, pancreatic dornase, helped wounds in animals to heal quickly.

Two fungus diseases of vegetables were experimentally controlled with streptomycin.

Government permission was granted for use of Aureomycin to preserve uncooked poultry, first approval of such use of antibiotics on food.

Chemistry and Physics

Viruses which had been taken apart into their chemical constituents and put back together were found to breed true to form.

The anti-neutron was discovered. Discovery of the elusive particle, the neutrino, was confirmed. The anti-proton was found to be double the expected size.

Hydrogen-bomb-type reactions occurring in the hot interior of the stars could account for the creation of all known elements of matter, it was announced.

The Russians put finishing touches on a 10,000,000,000 electron volt atom smasher which will be the most powerful operating in the world, and announced plans for constructing a 50 Bev machine.

Fallout from hydrogen bomb tests was found to be world-wide.

Experiments with animals showed that premature aging is one of the permanent effects of radiation.

The world's first large-scale atomic power station started feeding electricity into Britain's grid system.

The U.S. standard meter bar was taken to Paris and checked against the international standard and found to be unchanged.

Automatic warning devices were developed for detecting nerve gas and related poisonous gases.

The centennial of the discovery of mauve, first synthetic dye, was celebrated. See page 640, October issue.

A chemical needed for muscle contraction, myokinase, was isolated and crystallized for the first time from muscle tissue.

The Nobel Prize in Chemistry was awarded this year to Sir Cyril N. Hinshelwood of the University of Oxford, England, and Prof. Nikolai N. Semenov, founder and permanent director of the Institute of Chemical Physics, Moscow, for detailed studies of chemical reactions.

Invention and development of the transistor, tiny replacement of the bulky and delicate vacuum tube, brought the Nobel Prize in Physics to Drs. John Bardeen of Champaign, Ill., Walter Brattain of Murray Hill, N.J., and William Shockley of Mountain View, Calif.

Engineering and Technology

A voice-operated typewriter was developed which will type direct from dictation.

The first underwater telephone cable linking England with the United States and Canada was opened to public service.

A new method of food preservation was developed combining sterilization with high gamma radiation and refrigeration.

Geophysics

A new record for the heaviest recorded one-minute rainfall, set in Iowa when the rate of fall was 0.69 inch per minute for 1.4 minutes, was reported.

A dense smog lasting just over two days killed almost 1,000 persons in Greater London in January.

The world is between two Ice Ages and another glacial advance can be expected within a few centuries, it was reported.

Medicine

Exact site in the nervous system hit in multiple sclerosis was pin-pointed for the first time as the glial cell, rather than myelin, as previously thought.

Vaccines against cold-like respiratory diseases known as AD, APC, RI, and ARD viruses were developed and found effective in Navy and Army recruit training camps.

Pure crystals of a virus of the Coxsackie group

were obtained for the first time, making the second animal virus ever obtained in pure crystalline form and the first ever obtained from muscle tissue.

Discovery of a new group of viruses that may be the cause of croup in babies was announced.

The virus causing "shipyard eye," or keratoconjunctivitis, was isolated and successfully grown in tissue cultures.

Existence in well persons of some kind of immunity or natural resistance to cancer was shown by the sloughing off, with vigorous rejection reaction, of living cancer cells injected under the skin of prisoner volunteers in contrast to the growth and spread of cancer cells implanted under the skin of far-advanced volunteer cancer patients.

Potential anti-cancer and anti-leukemia agents reported, though none was called a cure, were: viruses, the fruit fly's maturation hormone, antibiotics, β-3-thienylalanine, 6-diazo-5-oxo-L-norleucine and 2-chloroethyl methanesulfonate.

Evidence that animal and hardened vegetable fats in the diet increase the level of potentially artery-hardening cholesterol in the blood and that vegetable oils will reduce cholesterol levels was reported. Large daily doses of nicotinic acid were reported to decrease cholesterol in the blood.

Measurement of large fat molecules in the blood was found not to have the unique value previously claimed for diagnosing tendency to heart disease.

Life-threatening clots in the pulmonary artery can be destroyed by plasmin, enzyme from blood plasma, it was found.

A portable heart monitor powered by flashlight batteries was reported potentially useful for detecting life in civil accident or war casualties.

Pills for diabetics were made from sulfa drug relatives and given wide clinical trials in which they showed promise of controlling diabetes without insulin in some patients, but one of the drugs gave undesirable reactions in some patients leading to its abandonment. See page 822 of this issue.

A possible antidote to radiation injury was reported in commercially available trypsin inhibitor from soy beans. Blood plasma freshly drawn from spleen and spleen cells was announced as protective against radiation.

Discovery of a powerful antidote to nerve gases, 100% effective in mice, named PAM (2-pyridine aldoxime methiodide), was announced.

Rheumatoid arthritis was induced in pigs, the first non-human animal in which the disease could be produced.

Synthetic form of the pituitary gland hormone oxytocin was created.

Intermedin, pigmentation hormone of the skin, was isolated in pure form and its chemical structure determined.

Profound changes in body chemistry involving an enzyme that removes a methyl group and transforms it to formaldehyde and which explain tolerance to narcotic drugs were discovered for the first time.

Anileridine, a potent pain-killer with few undesirable side-effects was synthesized by remodeling N-allylnormorphine.

Sharp rise in blood platelets was reported to coincide with ovulation, promising a better method of determining a woman's most fertile period.

Discovery of a drug, polybrene, that reverses the anti-blood-clotting effect of heparin was announced.

A chelating chemical, ethylene-diamine tetraacetic acid, was announced as a potential remedy for gas gangrene.

Blood ready for discarding by blood banks after 3 weeks of storage can be held another 5 weeks and revived for transfusion by treatment with guanosine. Frozen blood can be stored in liquid nitrogen for an essentially infinite period, it was reported.

Discovery of a new clotting factor in human blood was announced.

Anti-anemia vitamin B-12 was found in the liver in abundance, being able to supply the body for up to 3 years in cases of impaired absorption of the vitamin.

The antibiotic neomycin and the amino acids arginine, ornithine, and citrulline, were found effective in reducing toxic accumulations of ammonia in some cases of liver disease, heart trouble, and shock.

Allocations for Salk polio vaccine were lifted because of plentiful supplies, while estimates of 50% reduction in paralytic polio in 1956 over 1955 in spite of a severe outbreak in Chicago were given. See page 644, October issue.

Germ-stopping action of penicillin was found due to blocking of the germ's production or use of adenosine triphosphate.

The year's new antibiotics included oleandomycin, so named because it contains a sugary chemical of the oleander bush; Bryamycin, from organisms in Hawaiian soil; a team of tetracycline and oleandomycin; and tritium-tagged streptomycin for study.

A chemical, *n*-hexadecane, added to tuberculosis germs was reported to make possible creation of an effective killed germ vaccine against tuberculosis.

Lack of an enzyme that converts galactose, one of the sugars in milk, into glucose was discovered to be the cause of galactosemia, disease of babies causing blindness, mental defect, and death.

Development of heart catheterization for study and diagnosis of heart, circulation, and pulmonary conditions in health and disease won the 1956 Nobel Prize in medicine and physiology for Dr. Werner Forssman of Germany and Drs. Dickinson W. Richards and André Cournand of Columbia University, New York.

Patents

A salt substitute that tastes and looks like salt for patients on a low sodium diet. Patent 2,742,366.

A 10-inch thick television set that can be hung on the wall like a painting. Patent 2,760,119.

A vaccine against the world's worst cattle disease, rinderpest. Patent 2,756,176.

Psychiatry and Psychology

Experience with tranquilizing drugs included: good results reported for two new ones, meprobamate and promazine hydrochloride; large scale use and evaluation of the drugs undertaken by the Veterans Administration; unpleasant side effects of the drugs controlled in certain instances by Cogentin which stops finger trembling and in others by better manipulation of the dosage.

The heart muscle can be conditioned to respond in a certain way to angering or frightening stimuli and the tranquilizing drugs can lower blood pressure by modifying or reducing such conditioned responses, it was found.

A Study of the Formulation,

Physical Properties and Compatibility of

A PROPOSED LOTION VEHICLE*

by J. Richard Fennell, John W. Schermerhorn†, and Mitchell J. Stoklosa††

THERE are several considerations in the formulation of a lotion vehicle. The objective is to produce a base that is stable and compatible with a large number of dermatological medicinal agents and that is still suitable for use on the human skin, both normal and diseased. An emulsion, rather than a suspension, is preferable. Emulsions offer the greater possibilities for the incorporation of both oil- and water-soluble materials. It is the opinion of the authors that water-in-oil emulsions are inferior as lotion bases to oil-in-water emulsions, since the former more nearly resemble the hydrocarbon base ointments and hence have the same disadvantages.

The lotion should hinder as little as possible the action of the medicament on the skin; and all the ingredients in the vehicle should have a low index of sensitivity.

The lotion should not interfere with the normal acid mantle of the skin, the first line of the body's defense against external organisms.[1] Therefore the lotion should be preferably acid.

The viscosity of the lotion should be such as to allow easy pouring from the bottle, without shaking, while serving as a suspending medium for insoluble medicaments.

The lotion should also give a pleasant cosmetic effect when applied to the skin. The critical stage in lotion application occurs within a few seconds after use. Since the fat in the emulsion has great affinity for the skin, it separates readily from the emulsion during application and is likely to leave a film of water on the skin. In poorly formulated lotions this water actually rolls off, producing what is sometimes referred to as a "watery feel." The addition of a humectant to the lotion prevents this "watery feel" and adds to the emollient effect.[2]

The purpose of this investigation was to formulate a stable lotion vehicle satisfying the above criteria as nearly as possible. Because it was felt that too little information was available concerning the actual physical characteristics of a good lotion vehicle, it was decided to study certain formulations in an attempt to investigate factors that affect these physical properties.

MATERIALS

Polyoxyl 40 stearate U.S.P., available commercially as Myrj 52,[3] was selected as the emulsifier because of its wide compatibility range. It is a nonionic, surface active agent, and its molecule contains both a hydrophilic (polar) group and a lipophilic (nonpolar) group. According to Appel[4] this emulsifier is considered safer than sodium lauryl sulfate when applied to skin with a dermatitis caused by detergents.

Deltyl extra[5] was included because of its solvent action on many medicaments and its ability to penetrate the skin. It is a clear, colorless, mobile liquid consisting principally of isopropyl myristate, with a small amount of isopropyl esters of other saturated fatty acids. According to Pears[6] the compatibility of isopropyl myristate with natural secretions, coupled with low viscosity and general similarity to the common lipoids, results

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[1] Jacobi, O., and Heinrich, H., *Proceedings of the Scientific Section*, The Toilet Goods Association, 21, 6(May 1954).

[2] *A Guide to Cosmetic and Pharmaceutical Formulation with Atlas Products*, Atlas Powder Company, Wilmington, Del., 1953, p. 39.

[3] Trade name of Atlas Powder Company.

[4] Appel, B., *Am. Profess. Pharm.*, 21, 940(Oct. 1955).

[5] Trade name of Givaudan-Delawanna, Inc., New York, N.Y.

[6] Pears, G. S., *Perfumery Essent. Oil Record*, 44, 84, 101(March 1953).

in a fairly high degree of skin absorption. It gives an emollient but nongreasy "feel" on the skin. Pears also emphasizes its value as a vehicle in those applications requiring penetration of the therapeutic agent into the skin.

Cetyl alcohol N.F. was included because it gives a characteristic velvety texture to the skin after the lotion has been applied.[7] It is also useful in varying the viscosity of the lotion.

Wool fat U.S.P., which upon the addition of water becomes lanolin, was used for its emollient effect. The Dispensatory[8] states: "No positive reactions to 1% lanolin were obtained." These were reactions to patch tests.

Liquid petrolatum U.S.P. was added to overcome the drying effect on the skin following application of the lotion. By varying the amounts of Deltyl extra and of liquid petrolatum in the lotion, a residual film was obtained which was emollient but not greasy.

Kessco Wax A-21,[9] a commercial variety of acid-stabilized glyceryl monostearate, was used to stabilize the lotion vehicle in the presence of phenolic substances. Preliminary experimentation showed that Tegacid,[10] another commercial variety of acid-stabilized glyceryl monostearate, did not protect the vehicle from incompatibility with resorcinol.

A mixture of 0.10% methylparaben U.S.P. and 0.05% propylparaben U.S.P. was employed as a preservative in some of the formulations.

EXPERIMENTAL

A basic lotion vehicle was prepared from the formula which follows, and to it were added various emulsion stabilizers to increase its compatibility range.

Lotion Vehicle I

Deltyl extra	30.0 ml.
Liquid petrolatum	10.0 ml.
Polyoxyl 40 stearate	20.0 Gm.
Cetyl alcohol	23.5 Gm.
Wool fat	5.0 Gm.
Water, *q.s. ad*	1000.0 ml.

Different methods of manufacture were tried in order to determine the best for this particular lotion. It was decided that a method of manufacture recommended by Griffin[11] was the most satisfactory for the preparation of this oil-in-water emulsion. He says: "When a preformed emulsifier . . . is used, good results are usually obtained by dissolving or dispersing the emulsifier in the oil phase. . . . With large amounts of emulsifier and a minimum agitation, adding the water to the oil slowly to the inversion point (w/o to o/w) usually gives finest particle size and greatest stability."

Experimentation showed that the inversion point of the emulsion occurred upon the addition to the oil phase of approximately 250 ml. of water; so that if 300 ml. of water were added to the oil phase an excellent primary emulsion would be formed. From Griffin's method and from experimentation the following procedure for making the vehicle was determined and was used in preparing the lotion.

1. The components of the oil phase, which included all ingredients except water, were heated to 80°.
2. The water was heated to 80°.
3. Three hundred ml. of the water was added slowly to the oil phase with agitation until the primary emulsion was formed, care being taken to keep air from being entrapped in the emulsion.
4. The primary emulsion was gradually diluted to about 1000 ml. with the remaining water.
5. The lotion was stirred slowly and continuously with an electric stirrer until it cooled to about 30°, and then its volume was adjusted to 1000 ml.

In order to evaluate the compatibility of the lotion vehicle with commonly prescribed dermatological substances, 120-ml. samples of lotions containing the medications shown in Table I were prepared.

The method recommended by Goldstein[12] was used to incorporate the medicaments into the lotion vehicle.

"The medicinal agent is mixed with enough glycerin to have 3% v/v of glycerin in the final

TABLE I—COMPATIBILITIES OF MEDICAMENTS WITH LOTION VEHICLES

Medication	Lotion Vehicle	
	I	*II*
Aluminum acetate solution, 10%	A	A
Ammoniated mercury, 5%	A	A
Benzocaine, 5%	A	A
Benzyl benzoate, 25%	A	A
Boric acid, 10%	A	A
Calamine, 10%	A	A
Coal tar solution, 10%	A	A
Ichthammol, 10%	A	A
Juniper tar, 5%	A	A
Menthol, 0.25%	A	A
Peru balsam, 5%	C	C
Phenol, 2%	B	B
Precipitated sulfur, 5%	A	A
Precipitated sulfur, 5% Salicylic acid, 2%	B	A
Resorcinol, 2%	C	A
Salicylic acid, 5%	B	A
Starch, 10%	A*	A
Talc, 10%	A	A
Tannic acid, 20%	C	C
Zinc oxide, 10%	A	A

A—Satisfactory; shows no apparent separation into layers or any sedimentation after standing for 30 days.
B—Satisfactory; separation into layers and/or shows sedimentation, but shakes in well.
C—Chemically or physically incompatible.
*—Mold growth.

[7] Osol, A., and Farrar, G. E., Jr., *The Dispensatory of the United States of America*, 25th ed., J. B. Lippincott Co., Philadelphia, Pa., pp. 266, 267.
[8] *Ibid.*, pp. 1510, 1511.
[9] Trade name of Kessler Chemical Company, Philadelphia, Pa.
[10] Trade name of Goldschmidt Chemical Corporation, New York, N.Y.
[11] Griffin, W. C., "Emulsions," *Encyclopedia of Chemical Technology*, The Interscience Encyclopedia, Inc., New York, N.Y., 5, 709(1950).
[12] Goldstein, S. W., THIS JOURNAL, 13, 550(1952).

product and enough of the vehicle to form a smooth paste. Additional vehicle is added with trituration to make the desired volume. . . . In some instances it is possible, and sometimes it is preferable, to use the bottle as the final mixing vessel. This is generally true when the medicinal agent is added as a prepared solution; *e.g.*, coal tar solution, thymol in alcohol, etc. In such instances, transfer the measured volume of vehicle to the bottle, add the solution of the medicinal agent, immediately close the bottle and shake vigorously. When insoluble powders such as zinc oxide, starch, sulfur, etc., are to be suspended in the vehicle, it is preferable to use a mortar and pestle."

The results of these compatibility tests (Table I), indicated that the vehicle was incompatible with resorcinol, with tannic acid, and with Peru balsam. With phenol the vehicle was thinned considerably, and upon standing a separation of water occurred. Salicylic acid also thinned the vehicle and formed a sediment upon storage at room temperature.

In an effort to overcome as many of these incompatibilities as possible the following concentrations of emulsion stabilizers were added to the original lotion vehicle:

Veegum[13]: 1.0%, 2.0%, 3.0%
Methylcellulose U.S.P.
  4000 c.p.s. viscosity grade: 0.2%, 0.5%, 1.0%
  1500 c.p.s. viscosity grade: 1.0%, 2.0%
Sodium carboxymethylcellulose U.S.P.
  (medium viscosity grade): 1.0%, 2.0%
Glyceryl monostearate N.F.: 0.2%, 0.5%, 1.0%
Kessco Wax A-21: 0.1%, 0.2%, 0.3%, 0.4%, 0.5%, 1.0%

Each of these lotion vehicles was tested for compatibility with the medications shown in Table I. Only in the lotion vehicles which contained Kessco Wax A-21 was the compatibility range increased. These vehicles were compatible with resorcinol. The lotions which contained 0.3% or more of Kessco Wax A-21 were thickened too much when resorcinol was added. In a concentration of 0.2% the vehicle was compatible with resorcinol but was not excessively thickened. Furthermore, the vehicle was more nearly compatible with phenol and with salicylic acid.

Since the lotion prepared according to the revised formula, containing 0.2% of Kessco Wax A-21, did not possess the desired viscosity, a series of lotions was prepared using different amounts of cetyl alcohol, and the relative viscosity of each sample was determined. The relative viscosity was determined by using the time in seconds required for the lotion vehicle to flow from the 0 mark to the 5-ml. mark of a 10-ml. Mohr pipet divided by the time in seconds required for water to flow from the 0 mark to the 5 ml. mark of the same pipet. All viscosity readings were determined at 25°. The results of these determinations are shown in Table II and Fig. 1.

[13] Trade name of R. T. Vanderbilt Company, New York, N.Y.

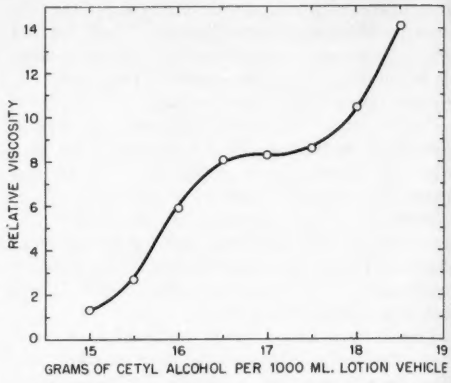

Fig. 1—The effect of various concentrations of cetyl alcohol on the relative viscosity of Lotion Vehicle II.

TABLE II—RELATION OF VISCOSITY TO CETYL ALCOHOL CONCENTRATIONS

Lotion Vehicle	Per Cent w/v of Cetyl Alcohol	Relative Viscosity
A	1.50	1.3
B	1.55	2.7
C	1.60	5.9
D	1.65	8.1
E	1.70	8.3
F	1.75	8.6
G	1.80	10.4
H	1.85	14.1

These lotion vehicles were reviewed to decide which one had a viscosity that would provide a good suspending medium for insoluble powders and that would also pour easily from a bottle. Vehicle A had a viscosity near that of water. Vehicle B was somewhat better. The viscosity of Vehicle C was fairly good, but upon being shaken bubbles easily formed. Vehicles D, E, and F possessed viscosities that allowed easy pouring and spreading of the vehicle. Upon being shaken these vehicles showed few bubbles. Vehicle G was also satisfactory but was slightly thick for the suspension of insoluble powders. Vehicle H was too viscous to be poured from a narrow-necked bottle.

The formula for Vehicle E was selected for the lotion vehicle, because if there were slight deviations in the amount of cetyl alcohol present, the viscosity of the lotion would not be changed significantly.

Based on the following formula, 120-ml. samples of lotions containing the medications in Table I were prepared.

The *p*H of this lotion determined on a Beckman *p*H meter was 6.6.

The results of compatibility tests, shown in Table I, indicate that Lotion Vehicle II was

(Continued on page 799)

An Aid to Compounding Speed and Accuracy

Silicone Coating of Laboratory Ware*

by L. E. Bingenheimer, Jr.†

The measurement of viscous liquids has been noted as a source of considerable error in prescription compounding. Relatively large errors are incurred in some cases even when long drainage time (30 seconds) is allowed. Silicone coating of graduates allows more accurate and rapid measurement by reducing adherence of aqueous liquids to the walls of the containers. Results, using syrup, glycerin, calamine lotion, and sulfonamide suspension, are presented.

INCOMPLETE drainage from graduates has been observed by almost everyone who has ever been required to measure small quantities of such viscous liquids as glycerin and syrup to be a source of considerable error. Goldstein and Mattocks[1] touched on this subject briefly in the "Professional Equilibrium and Compounding Precision" series published in THIS JOURNAL. From their comments two possible solutions may be drawn: (1) allowing longer draining time; (2) mixing the viscous liquid with one of lesser viscosity.

Difficulties arise, however, in the application of either of these ideas. Nothing approaching quantitative delivery is obtained even after 30 seconds of draining time, and it is doubtful that the busy pharmacist would be willing to spend a longer period of time waiting for a graduate to drain. The use of a liquid of lesser viscosity is a more acceptable solution, within limitations. Relatively good results may be achieved by transferring the major portion of the viscous liquid directly to the prescription bottle and then rinsing the graduate with a measured quantity of a less viscous liquid. This method is not applicable, of course, when the viscous material is the only liquid ingredient in the prescription.

It is the purpose of this paper to suggest another solution to this problem, namely, the silicone coating of prescription graduates, to insure rapid and practically complete drainage of most viscous liquids.

Silicones—The term "silicone" is used to designate any of a group of compounds otherwise known as organosilicon oxide polymers or organopolysiloxanes. These compounds have two properties which commend them to our service: relative chemical inertness and a high degree of water repellency. When applied to glass and ceramic surfaces, they render these surfaces completely non-wettable. Silicone-coated glass is already widely used in several applications pertaining to pharmacy. The process of Goldman[2] for coating pharmaceutical vials to facilitate drainage has been widely accepted and has resulted in substantial savings in the packaging of injectables. As reviewed by Gilbert,[3] the coating of pipets and burets has improved precision and facilitated many analytical operations. The pharmacist can easily apply the same principle to advantage in compounding and dispensing prescriptions.

Two types of silicone products are available for treatment of glass surfaces: the methylpolysiloxane fluids (*e.g.*, Dow Corning 200

* Presented before the Section on Practical Pharmacy, A.PH.A. Detroit Convention, April 1956.

† Associate Professor of Pharmacy, University of Tennessee School of Pharmacy, Memphis.

The silicone products used in this study were supplied through the courtesy of Dow Corning Corporation, Midland, Mich., and General Electric Silicone Products Department, Waterford, N.Y.

[1] Goldstein, S. W., Mattocks, A. M., and Biermacher, U., THIS JOURNAL, 12, 421(1951).

[2] Goldman, R., U.S. Patent No. 2,504,482 (assigned to Premo Pharmaceutical Laboratories, Inc.), *Chem. Abstr.*, **44**, 5552*e*(1950).

[3] Gilbert, P. T., Jr., *Science*, **114**, 637(1951).

Fluids) and the incompletely hydrolyzed methylchlorosiloxanes (*e.g.*, General Electric Dri-Film SC-87). There are minor differences in the method of using these compounds but the results obtained are identical.

Silicone Coating—For a uniform, permanent coating, glassware should be thoroughly cleaned and air dried or wiped dry with a clean cloth. Following cleaning and drying, the most satisfactory procedure for graduates is to fill them with a solution of the silicone compound in carbon tetrachloride or similar solvent. Manufacturers' recommendations call for a 1 to 2% solution of the Dow Corning fluids or a 5 to 10% solution of the General Electric Dri-Film.

The filled graduates are then emptied and allowed to drain. Application of the compounds to the outside of graduates should be avoided because of the slipperiness imparted to the surface. The solvent may be removed by air drying, but drying in an oven at 100° C. for 15 to 30 minutes is recommended. The methylpolysiloxane fluids must then be cured by heating for one hour at 300° C. or for two hours at 275° C. Many laboratory ovens are not capable of attaining these temperatures, but the oven of a kitchen range is quite satisfactory. The chlorinated compounds require no curing, as they react on contact with the trace of adsorbed water retained on the air dried glass surface. One of the products of this reaction is hydrochloric acid; therefore the wearing of rubber gloves in carrying out the coating process is recommended.

The draining characteristics of six graduates of each of the following types—100-ml. cylinder, 4-oz. conical, 1-oz. conical, and 5-ml. conical—were observed with syrup, glycerin, a bentonite suspension of sulfonamides containing 0.1 Gm. of total sulfonamides per ml., and calamine lotion (U.S.P. XIV formula), before and after silicone coating, and with draining times of from 5 to 30 seconds. The U.S.P. XIV formula for calamine lotion was used to provide variety in suspending agents. The results of these observations are summarized in Table I.

Two emulsions of 50% cottonseed oil-in-water were also prepared with acacia and with Span 20 and Tween 20, respectively.

DISCUSSION

It will be noted that, in the cases of syrup, glycerin, and the sulfonamide suspension, silicone coating substantially improved drainage from all four graduates. In most cases drainage was practically complete after 20 seconds. Exceptions were the 100-ml. cylinders, in which measurable drainage continued throughout the 30 seconds, and the 4-oz. graduates in the case of glycerin. The amount of liquid adhering to the graduates after silicone coating was from 36% to 97% less than before silicone coating.

It is interesting to note the better drainage of the 4-oz. conical graduates as compared with the cylinders before coating, and the even greater superiority of the conical graduates in this respect after coating. Goldstein and Mattocks[1] have noted that an error of 1 mm. in reading the meniscus at the 100-ml. gradu-

TABLE I—DRAINAGE OF GRADUATES

Effect of Silicone Coating on Loss of Viscous Liquids through Incomplete Draining, Residues in ml.

Type of Graduate	Draining Time, sec.	Syrup		Glycerin		Sulfonamide Suspension		Calamine Lotion, U.S.P. XIV	
		Uncoated	*Coated*	*Uncoated*	*Coated*	*Uncoated*	*Coated*	*Uncoated*	*Coated*
Cylindrical, 100 ml.	5	7.3	7.1	12.3	9.6	6.7	4.7	11.0	13.8
	10	5.3	5.0	7.9	7.6	5.5	1.0	9.0	11.4
	15	4.0	3.0	6.7	5.0	4.0	0.9	8.0	10.3
	20	3.6	2.0	5.5	4.4	4.5	0.7	7.3	8.5
	25	3.2	0.8	5.0	3.4	4.1	0.6	6.9	8.2
	30	3.0	0.7	4.9	3.1	3.8	0.5	6.6	7.2
Conical, 4 ounce	5	6.3	5.5	8.7	6.9	5.4	1.1	8.5	9.2
	10	4.4	2.2	6.5	4.7	4.7	0.6	7.6	7.5
	15	3.6	0.8	5.0	3.1	4.2	0.2	6.5	7.1
	20	3.0	0.2	4.4	2.5	3.8	< 0.1	5.8	5.8
	25	2.7	0.1	4.0	2.1	3.6	< 0.1	4.5	5.9
	30	2.6	0.1	3.8	1.7	3.4	< 0.1	4.4	5.5
Conical, 1 ounce	5	2.0	1.5	3.2	2.1	2.2	0.4	3.1	3.3
	10	1.4	0.6	2.3	1.2	1.9	0.1	2.7	2.9
	15	1.1	0.2	1.8	0.6	1.7	< 0.1	2.4	2.4
	20	1.0	0.1	1.5	0.4	1.5	< 0.1	2.3	2.3
	25	0.9	0.1	1.4	0.2	1.3	< 0.1	2.1	2.0
	30	0.8	< 0.1	1.2	0.1	1.1	< 0.1	1.9	1.9
Conical, 5 ml.	5	0.6	0.5	0.7	0.6	0.6	0.1	2.4	3.9
	10	0.4	0.2	0.5	0.3	0.5	< 0.1	1.8	2.4
	15	0.2	0.1	0.4	0.2	0.4	< 0.1	1.5	2.3
	20	0.2	0.1	0.3	0.2	0.4	< 0.1	1.5	2.4
	25	0.2	< 0.1	0.3	0.1	0.4	< 0.1	1.3	1.8
	30	0.2	< 0.1	0.2	0.1	0.3	< 0.1	1.2	1.9

ation introduces an error of about 0.5 ml. in the 100-ml. cylinder, and about 1.8 ml. in the 4-oz. conical graduate. This greater error would seem to be compensated for to a considerable degree by the better drainage from the conical graduate. In the same connection, this type of error is greatly reduced by the silicone coating inasmuch as an aqueous liquid does not form a meniscus in contact with the water repellent silicone surface.

The behavior of the U.S.P. XIV calamine lotion is completely inconsistent with the other liquids studied. This may be attributed to two causes: (1) affinity of stearate in the polyethylene glycol monostearate used as a suspending agent for the hydrocarbon groups of the silicone structure; (2) tendency of the lotion to form aggregates instead of behaving as a true fluid. Preliminary tests with calamine lotion prepared according to the U.S.P. XV gave results almost identical to those obtained with the sulfonamide suspension.

Preliminary tests with oil-in-water emulsions show marked improvement in drainage characteristics of graduates following silicone coating. The acacia emulsion in the 100-ml. cylinder gave results very similar to syrup. The Span and Tween emulsion, which was somewhat less viscous, gave considerably less residue after 5 seconds, but the acacia emulsion gave more complete drainage after 30 seconds. Again, the difference may be attributed to affinity of the fatty acid component of the emulsifying agent for the hydrocarbon groups in the silicone structure, but it should be emphasized that the difference was only in the degree of improvement after coating.

CONCLUSIONS

Silicone coating is a simple process which can be carried out by the pharmacist at the prescription counter without extensive equipment and at slight cost.[4] Silicone coating appears to decrease substantially the loss of most viscous aqueous liquids through incomplete drainage and to reduce the draining time. Results are less satisfactory with liquids containing suspending or emulsifying agents with strongly lipophilic groups. Volume determinations are simplified by the failure of aqueous liquids to form a meniscus in contact with the silicone-coated surface. Even with silicone coating, a draining time of 30 seconds should be allowed for all measurements of viscous liquids in 100-ml. cylinders. Shorter draining times may suffice for conical graduates, except in the measurement of glycerin.

[4] Desicote, a solution of the partially hydrolyzed chlorosiloxane type of compound, is available from Beckman Instruments, Inc., at a cost of $1.75 for a 2-oz. bottle, which is sufficient to silicone-coat all the glassware in a large prescription department.

Proposed Lotion Vehicle • • • *from page 796*

Lotion Vehicle II

Deltyl extra	30.0 ml.
Liquid petrolatum	10.0 ml.
Polyoxyl 40 stearate	20.0 Gm.
Kessco Wax A-21	2.0 Gm.
Cetyl alcohol	17.0 Gm.
Wool fat	5.0 Gm.
Methylparaben	1.0 Gm.
Propylparaben	0.5 Gm.
Water *q.s. ad*	1000.0 ml.

compatible with all the medicinal agents tested except tannic acid and Peru balsam.

DISCUSSION

Experimental evidence in this work has shown that one of the major problems in the formulation of a lotion vehicle is the producing of a uniform and constant viscosity. Even minor deviations in the concentration of ingredients of the oil phase markedly alter viscosity. Furthermore, the cetyl alcohol content in the proposed lotion exerts an unusual though, in part, predictable effect. This interesting, and apparently new, observation of the effect of cetyl alcohol is illustrated in Fig. 1. The "plateau" observed in studies on Lotion Vehicle II seems to coincide with what the authors considered to be a satisfactory viscosity range for the vehicle. This same effect was noted in preliminary formulations prepared by the authors. It seems possible, from these observations, that such an effect might occur in any lotion containing cetyl alcohol.

In an attempt to overcome incompatibilities occurring when phenolic substances were incorporated into the vehicle, the addition of glyceryl monostearate showed the greatest promise. Only the acid-stable form was effective; and of the two samples tested, one was unsatisfactory. This would indicate that the particular "stabilizer" in the monostearate is of considerable importance.

These studies have also indicated that the method of stirring is important. When, during the cooling of the vehicle, a mechanical stirrer operating at slow speed was used, the viscosity of the vehicle was consistently greater than when stirring was done by hand. This does not, in the opinion of the authors, exclude preparation by hand, since final viscosity can ultimately be controlled by varying the cetyl alcohol content.

Storage of both Lotion Vehicle II and the vehicle containing various medications at 10° and at 25° for varying periods of time resulted in most cases in excellent stability. At 37° a slight separation at the surface was observed, but the lotions were easily reconstituted on being shaken.

No formulation was developed which exhibited compatibility with all the medications tested. However, the proposed vehicle showed wide range of compatibility, and the formula is offered for further investigation.

A.Ph.A. House of Delegates Considers the Profession's

CURRENT PROBLEMS

Two-day meeting provides opportunity for airing conflicting points of view. Stand on important issues stated or clarified for final phrasing by Resolutions Committee.

THE First Interim Meeting of the House of Delegates of the AMERICAN PHARMACEUTICAL ASSOCIATION which was held in Washington, D. C., November 10 and 11, at the Willard Hotel provided exactly what those who proposed such meetings had hoped for, namely, an uninterrupted forum for the discussion of some of pharmacy's most perplexing problems.

Led by the provocative address of Chairman Troy C. Daniels (to be published in the January 1957 issue) and supported by the opening remarks of President John A. MacCartney and Council Chairman John B. Heinz, the members of the House of Delegates responded splendidly in making known the views of the profession in their respective localities and in their various vocational classifications. It was a fine example of the democratic process at work, and it led to reaffirmation of previous actions of the ASSOCIATION in some cases, expression of the current consensus in others, and recommendations for further study and accurate phrasing of the conclusions reached, for final action at the New York Convention April 28 to May 3, 1957.

Objectives of the House of Delegates

In his address to the delegates, Dr. Troy C. Daniels, Chairman of the House, introduced some of the more important topics for discussion. He reported that the committee appointed to state the objectives of the House had prepared the following statement for consideration:

A.Ph.A. Officers *conducting the House of Delegates meeting, Washington, D.C., November 10–11 (l. to r.): Dr. Robert P. Fischelis, A.Ph.A. Secretary and General Manager; Mr. John J. Dugan, A.Ph.A. Vice President; Mr. John A. MacCartney, A.Ph.A. President; Dr. Troy C. Daniels, Chairman of the House of Delegates; and Mr. John B. Heinz, Chairman of the A.Ph.A. Council.*

"The objectives of the AMERICAN PHARMACEUTICAL ASSOCIATION are stated in the Constitution.

"It shall be the function of the House of Delegates to interpret these objectives in terms of contemporary requirements and to serve as the legislative and policy-forming body of the ASSOCIATION. To this end, it is declared to be the function of the House to give consideration to all appropriate proposals emanating from constituent bodies represented in the House of Delegates.

"The officers of the House of Delegates are hereby charged with the duty of so arranging the programs of interim and annual meetings of the House as to provide for full discussions and debate of contemporary problems, thereby furnishing the basis for long-range planning and the establishment of current and long-range policies. The officers in collaboration with the council are further charged with the duty of properly delegating recommendations of the House to the appropriate officers and committees so as to assure dissemination of information on the policies adopted and their implementation by whatever means may be feasible and desirable."

This statement was approved by the House and on recommendation of the chairman was referred to the ASSOCIATION's Committee on Constitution and By-Laws for appropriate action.

Organizational Structure of American Pharmacy

In discussing the general organizational structure of American pharmacy, Dr. Daniels pointed out that it was time to undertake a number of studies to provide for better orientation of all groups within the profession and industry, to plan for the future, and to coordinate the efforts of all concerned if possible.

A discussion of this phase of Dr. Daniels' address led to the adoption of the following resolution:

"Resolved, That the chairman of the House of Delegates designate a committee to consult with an outside specialized survey organization with the aim of developing a plan to determine what changes, if any, may be required in the organizational structure and objectives of the AMERICAN PHARMACEUTICAL ASSOCIATION to meet the present and future requirements of the pharmacists of the United States for the best type of service to the profession and to the public; to ascertain the staff and financial requirements to effectuate such a survey; and to report the outline of the plan and its costs to the next regular meeting of the House of Delegates."

Members of the House of Delegates listening intently to the challenging address by Dr. Troy C. Daniels, Chairman of the House, during First Interim Meeting. See January 1957 issue of THIS JOURNAL *for complete text.*

Pharmacy's Need for Economic Analysis

Dr. Daniels also discussed, in some detail, pharmacy's necessity for economic research and analysis with regard to cost factors in supplying pharmaceutical services; documentary reports and analyses on social and economic trends; an all-inclusive composite view of pharmacy's operation; and he urged presentation of the pertinent information in an acceptable form to all segments of pharmacy and, through special articles, for public information.

The House of Delegates also endorsed the plan for the establishment of an economic research group proposed by Chairman Daniels and referred the problem of implementation to the Council for further study.

Other Current Problems

Other topics covered in Chairman Daniels' address and later discussed on the floor of the House included *marketing practices, substitution,* and *self-service* with respect to drugs, and expansion of the services of the ASSOCIATION in the field of research regarding *new drugs* as well as publication of reviews embodying the present status of knowledge and information on drugs in frequent use.

In the discussion of current problems, the members of the House of Delegates received a report from Dr. Stephen Wilson, chairman of the Committee on Social and Economic Relations, which revealed information regarding population studies with special reference to the future *manpower situation* in pharmacy. He pointed out that pharmacy's share of the enlarged student enrollment in the coming decade would have to be carefully worked out and safeguarded.

Legislative matters discussed included the anticipated emphasis on Federal legislation in the field of providing *medical care* for more people, the control of narcotic and hypnotic drugs, and the allocation of Federal funds for *state welfare projects,* including the supply of drugs.

Another topic of absorbing interest was the development of *poison information centers* reported by Dean Arthur Zupko, of the Brooklyn College of Pharmacy. This led to endorsement of a project to request the U.S. Public Health Service to establish a clearing house for information on poisons, with representation of the A.PH.A. on the committee which is to advise on this subject.

Summary of Actions Taken

The tenor of the discussions, which were in all cases quite complete, is reflected in the additional resolutions and actions summarized below.

The Committee on Time and Place of Meeting was asked to consider whether a time other than a weekend might be more appropriate for future interim meetings of the House of Delegates.

The ASSOCIATION's position in favor of pharmacy ownership by pharmacists was re-affirmed.

The House approved collection of Federal excise taxes at the manufacturer level and endorsed the position of the National Association of Retail Druggists on this issue.

A resolution to establish closer liaison with the Canadian Pharmaceutical Association and to recommend to that Association the establishment of a joint committee to foster programs of mutual interest, was approved.

The Committee on Professional Relations was requested to study the problem of providing increased pharmaceutical service to veterinarians and to the public with respect to veterinary prescriptions.

The Resolutions Committee was requested to give consideration to the problems arising from the requests of some physicians to have their prescriptions labeled with the names of the drugs contained therein.

Action taken by the Committee on Legislation in opposing non-prescription status for ointments and lotions containing dihydrocortisone was approved and authorization was given to continue to object to placing prescription products on a non-prescription status whenever there is valid reason to do so.

The Resolutions Committee was requested to prepare a resolution reflecting the policy of the ASSOCIATION in opposing "self service" as applied to drugs.

A resolution requesting the Council of the A.PH.A. to take action terminating representation of The Proprietary Association in the House of Delegates was referred to the Committee on Resolutions. The Committee reported that it "desires to give this matter further study and will bring in a recommendation at the April 1957 meeting of the ASSOCIATION." The Committee's request was approved.

Address of the REMINGTON MEDALIST

FRANK W. MOUDRY*

OVER the past few years we have seen many great advances in our profession, both in the pharmaceutical field and in the area of merchandising. Many important scientific discoveries and the promise of greater ones in the future offer us hope for a wonderful tomorrow for pharmacy and better health for the nation. Hardly less amazing are the constant advances being made in our modern pharmacy, both in its appearance and its efficient merchandising techniques.

But modern merchandising is a mixed blessing because, among its many advantages for pharmacy, are some few trends which will in the long run do more harm than good for our profession. Some of these trends encourage non-pharmacists to enter the drug distribution field. Other trends tempt pharmacists to compromise the professional character of their pharmacies and drug stores and to identify themselves competely with extreme, unprofessional merchandising techniques.

We have to admit that, when others enter our field or when we pursue unprofessional merchandising goals, it is in both cases for the same reason—greater profits. It comes down, then, to the *problem of keeping the spirit of commercialism within the limits of professional operation.* It has been the great objective of many pharmacists recently—and I am one of them—to preserve the professional spirit and at the same time to keep in step with the best modern trends of drug store merchandising.

Today there are persons who lament that pharmacy as a profession is on the down-swing; who forecast that because of modern merchandising competition all independent specialized retail outlets, including drug stores, will soon be absorbed as mere departments of the all-inclusive super-markets. Now that more and more retail outlets merchandise practically all drug products except prescriptions, the whole point of a drug store for the sale of drugs and medicines, say the pessimists, is lost.

That these are real problems, I do *not* deny. And they are serious because they affect our very existence as pharmacists and operators of retail pharmacies and drug stores. Yet I believe that the great American landmark, the retail drug store that blends professional health service with non-pharmaceutical merchandising, is *not* doomed. Our task is to see the dangers clearly, to think wisely about their solutions, and to inaugurate bravely the program that will preserve pharmacy as a profession and will safeguard the independent retail drug store as a major health center. To my mind this program, which is already under way, can be summed up in the following three objectives:

1. Renewal of professional ideals in pharmacy.
2. Modernization of pharmacy legislation.
3. Improvement of relations with the medical profession.

Renewal of Professional Ideals in Pharmacy

If we are going to preserve pharmacy as a profession, it is of fundamental importance that the term "profession" be more than just a word to us. A professional man is a man of idealism and pride and ethical conduct. He sees himself as a public servant, ministering to the health and well-being of his community. The drug store, despite the many merchandising services it provides, is essentially a health center, and the pharmacist is no ordinary citizen, but a man whose training, experience, and service should entitle him to the respect of the community.

Professional Spirit—Every day the pharmacist can rededicate his professional spirit by absolute integrity in the practice of pharmacy and by the professional health service he renders his customers. When we as pharmacists engage in unethical practices or condone such conduct in others, we not only undermine our own idealism but contribute serious harm to the prestige of the profession as well.

Perhaps there are cynics who would say that to talk of idealism and integrity and professional spirit in the present time of unscrupulous merchandising competition is to be naïve and impractical. If the cynics are right and I am wrong, then it is time we face the truth and drop our mask and stop pretending to be something we are not.

It is especially in the area of merchandising that we need to apply our professional spirit. In our store operation, we should be modern in the best sense. As good businessmen we should adopt

* Secretary of the Minnesota State Board of Pharmacy.
Address presented December 3, 1956, at the Testimonial dinner tendered to Dr. Frank W. Moudry on the occasion of the presentation of the Remington Honor Medal under the auspices of the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION, at the Hotel Roosevelt, New York City.

all the new, effective techniques that are in harmony with the professional dignity of a drug store.

Self-Service vs. Professional Goals—To be specific, what about the trend of grocery stores and super-markets toward self-service operation? Should drug stores adopt this technique? Arguments in favor of it stress the reduction of overhead expenses and the value of open displays.

These advantages are undeniable. But the question remains: Does self-service harmonize with the professional goals of a drug store? I wonder. It seems to me that the sale of drugs and medicines under self-service does not provide sufficient protection of the public. It also eliminates the numerous intimate customer contacts by which the pharmacist could give valuable professional guidance and health information. Finally, are we not forgetting that the moment we place drugs and medicines in self-service we have admitted to the public that it is equally safe for grocery stores and super-markets to distribute them? Especially for these reasons, then, if we pharmacists sell drugs and medicines in the self-service operation, we fail to accept our professional responsibility to the safety and health of the public.

Some State Boards of Pharmacy have passed regulations prohibiting self-service of drugs and medicines, and we hope that all states will protect their citizenry by similar regulations.

Professional Operation—Aside from the matter of integrity, there is great publicity value in the professional operation of a drug store. We all recognize the present need of improving public relations for pharmacy. While we wish great success to programs now underway, it is clear that no program can accomplish what an individual pharmacist can, in his own drug store.

For example, when a customer steps out of his local drug store, has he spoken to a professional man, or to just another businessman; has he been in a health center, or in just another retail variety outlet? In the final analysis, good public relations must originate in the local drug store. Before we can expect that legislatures, courts, and consumers look on us as professional men, we must first see ourselves in that light and display to the public a professionally operated drug store.

Modernization of Pharmacy Legislation

Another important area for the future of pharmacy is the matter of legislation. The individual pharmacist needs help in serving the health needs of the community. He cannot alone protect his neighbors from the dangers of unrestricted sale of medicines. Such protection is the purpose of pharmacy legislation, which should be as modern and effective as up-to-date merchandising. Unfortunately, many states have outmoded pharmacy laws, with statutes long obsolete in terms of protection for the citizens of today.

Proprietaries—When the profession of pharmacy works to revise and modernize these laws, it too often encounters misguided opposition. I have in mind at the moment the fight that pharmacy is waging in several states to restrict the sale of so-called proprietaries or packaged medicines.

Competent testimony is unanimous in its opposition to promiscuous distribution of packaged medicine. Nevertheless, many manufacturers and distributors right now are campaigning vigorously to make every kind of retail outlet a legalized supplier of packaged medicines. They oppose the enactment of legislation proposed by the profession of pharmacy which would safeguard the health of the public through statutory restrictions on the sale of so-called proprietaries

Our opponents, who would profit from the promiscuous distribution of medication, persuasively emphasize to legislators that since packaged medicines comply with Federal regulations, they must be safe for sale outside a drug store. Nor do they hesitate to suggest that greed motivates the pharmacists when they support legislation to confine the so-called proprietaries to the drug store.

Why all this strenuous opposition? Perhaps we can better understand it from the comment of a spokesman for the organized food merchants of New York before a joint legislative committee at Cooperstown, N.Y. He declared that grocers should be allowed to sell packaged medicines because these products carry large gross margins and the profits from their sale would enable merchants to keep grocery prices down.

There in plain words is the motive that urges the majority of the grocers and the operators of super-markets to favor promiscuous distribution of packaged medicines. To them, protection of public health is secondary to profits.

As we can see, the manufacturers of packaged medicines are strongly motivated, well organized, and alert to mobilize any and all support for wide-open sales of their products. Grocers and peddlers and operators of super-markets have been induced to help oppose pharmacy legislation. This combined pressure amounts to a strong political influence which makes it very difficult to enact effective pharmacy laws for the protection of the public.

At the present time in my home state we are engaged in just such a struggle. The Minnesota Board of Pharmacy, under the provision of the Pharmacy Act, restricts the sales of drugs and medicines to licensed stores. There are now, in a district court, injunction lawsuits directed against a food chain and a jobber for refusal to stop selling packaged medicines in violation of the State Pharmacy Act.

The defendants have asked the district court to dismiss the lawsuits, on the ground that to grant an injunction against them would be contrary to legal procedure, since they are entitled to be prosecuted in a criminal action. All this legal terminology may seem confusing but the significance of this judicial wrangling is clear. The defendants intend to break down the authority of the Minnesota Board of Pharmacy. Where there is so much at stake for public health, we can only hope that the court will give a favorable decision to the Board of Pharmacy.

Peaceful Settlement—To modernize pharmacy legislation certainly requires idealism, watchfulness, and perseverance of us. This is a real challenge. But an even greater challenge—and our ultimate goal—is not to defeat those who disagree with us but to cooperate with them in finding common ground for conciliation and mutual solution of mutual problems. It is difficult enough to engage in legal battles. It is more difficult still to enter that field of arbitration and cooperation that will produce a solution satisfactory to both parties and will serve the public interest. I sincerely hope that we will find the peaceful settlement.

Improvement of Relations with the Medical Profession

This final objective in the threefold program for the welfare of pharmacy could be the most vital to the economic survival of the American drug store.

The drug industry, we know, is booming today, and the future holds even greater promise. The profession of pharmacy is the public servant that makes these drugs available to the public. But our role is an intermediary one, between the physician who prescribes a medicine and the patient who buys it. In other words, we are a dependent profession. For the benefit of public health as well as for the economic prosperity of the pharmacist, it is important that the two professions—medicine and pharmacy—act ethically toward each other and cooperate on the most cordial terms.

To promote better professional relations between medicine and pharmacy we now have a joint committee known as the "National Pharmacy Committee on Relations with the Medical Profession." The membership consists of three members of the AMERICAN PHARMACEUTICAL ASSOCIATION, three members from the National Association of Retail Druggists.[1] On January 5, 1956, this committee met with a similar committee, the Pharmacy Liaison Committee of the Board of Trustees of the American Medical Association, to consider matters of mutual interest.

Physicians Practicing Pharmacy—In particular, these committees discussed the 1955 change in the Principles of Medical Ethics of the A.M.A., which would permit physicians to own and to operate pharmacies.[2] This was a reversal of their code of ethics, and has been very disturbing to the pharmacists of the country.

We have found that the leaders of the A.M.A. are as eager as we are to promote friendly relations between the physician and the pharmacist in each community. They understand and are sympathetic with the danger of economic encroachment on pharmacy. However, the power of the officials is limited since they must abide by the decisions of the House of Delegates (the legislature of the A.M.A.).

Since the joint committee meeting last January, the A.M.A. at their convention in June 1956 again revised their Principles of Medical Ethics to provide that physicians should limit the income of medical practice to services rendered the patient. To be effective, this change has to be approved by the House of Delegates.[3]

Mutual Cooperation Needed—I have said before on numerous occasions and I repeat again that the local medical society is the logical and most satisfactory place for the solution of the problems created by physicians entering the practice of pharmacy. Big-stick tactics will not be successful. What is needed is tact, diplomacy, and a willingness to cooperate—on both sides.

The problem of physician-owned pharmacies is an instance where *we* enlist the cooperation of the *medical profession*. But the relationship is mutual, and pharmacy is in a position to support medicine. The outstanding current example of this cooperation is the constant, vigorous support which pharmacy has provided in the medical profession's struggle to remain free from government domination. Medicine has always found her allied profession, pharmacy, at her side in the fight against socialized medicine.

In my 41 years in the profession, I have come to know many of the persons connected with the drug industry. The foresight, determination, and integrity of these men are my personal hope for the future of pharmacy. I only wish I could divide the honor of the Remington Award and could give each of these professional friends the recognition they deserve. And if I could make such a division of honor, even that *little* credit that would be left for myself, I would receive with humility and treasure with gratitude. In this spirit, I thank the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION for this Remington Honor Medal and for all the arrangements that have made this evening one of the great moments of my life.

[1] See p. 791 for a list of the members.

[2] See page 442, August 1956 issue, for a condensed version of the proposed principles.

[3] The A.M.A. House of Delegates, at its most recent meeting in Seattle during the last week of November, again debated the issues of physician dispensing and pharmacy ownership. Final action was deferred until the June 1957 A.M.A. meeting.

Purdue University

SCHOOL OF PHARMACY

PURDUE UNIVERSITY
SCHOOL OF PHARMACY
LAFAYETTE, INDIANA

September 24, 1956

Dear Alumni:

The members of the faculty join with me in extending our sincere greetings and best wishes to you. The progress of the school is best expressed in terms of its accomplishments.

Ever since the end of World War II we have operated at capacity. As a result, each year sees the production of one hundred well qualified and competent trained graduates to go forth to enter the profession. At the graduate level our school has earned an eminent position throughout the world. As this letter is written the one hundred and fortieth graduate student with an earned Ph.D. goes forth to join the group advancing our profession through teaching, research, and product development.

The campus at Purdue may best be characterized by its growth and development. Some thirty million dollars worth of construction is in progress to provide for increased educational, research, and recreational facilities for students. All of these developments add to and strengthen our program in pharmacy. In the near term future it is expected that a substantial addition will be made to our physical plant in pharmacy. Together with the physical plant our faculty is being expanded and strengthened continuously to meet the urgent demands of the dynamic era that lies ahead in the field of education.

We invite all alumni to return as opportunities permit to renew acquaintance and share with us the wisdom that comes through experience.

Sincerely,

Glenn L. Jenkins

Glenn L. Jenkins
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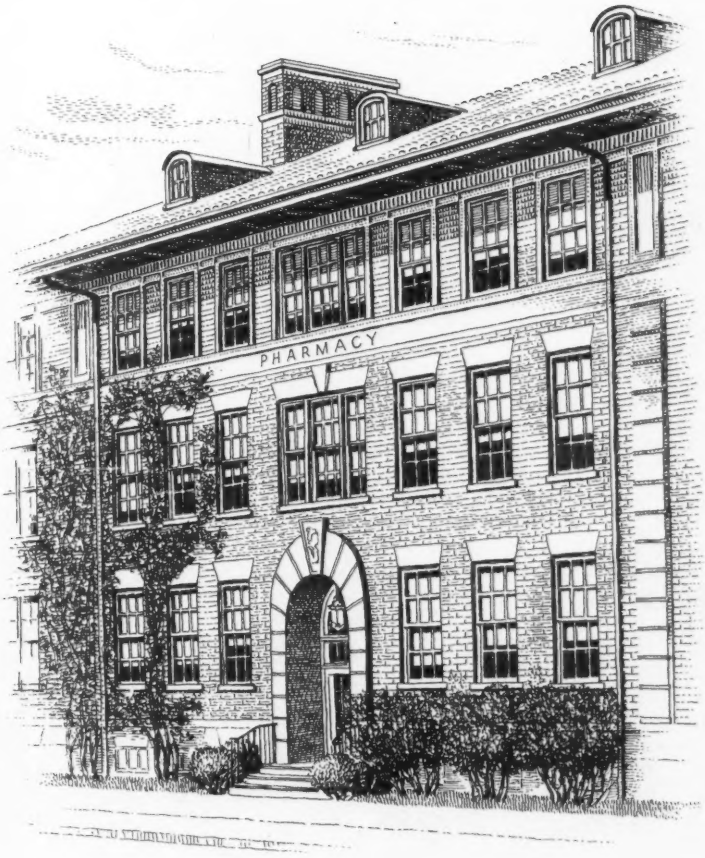

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TO AUTHORS OF PAPERS

The time is rapidly approaching when pharmaceutical practitioners, scientists, and educators from all over the United States will be preparing papers to be presented before the six Sections of the A.PH.A. at the New York Convention to be held April 28–May 3, 1957. These papers should be submitted to the Secretaries of the appropriate Sections as soon as possible.

ADDRESSES OF SECTION SECRETARIES

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Student	*Joann J. Johnson* University of Kansas City 5100 Rockhill Road Kansas City, Mo.
Practical Pharmacy	*Samuel W. Goldstein* 2215 Constitution Avenue, N.W. Washington 7, D.C.
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Pharmaceutical Economics	*Benjamin A. Smith* 3838 Hartman Drive Indianapolis 18, Ind.

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Chapter V, article VII of the By-Laws provides that:

"*All papers presented to the Sections shall become the property of the* ASSOCIATION, with the understanding that they are not to be published in any other publication prior to their publication in those of the AMERICAN PHARMACEUTICAL ASSOCIATION, except with the consent of the Editor of the appropriate JOURNAL and the Chairman of the Committee on Publications of the Council."

Criteria for Acceptance

Papers submitted for oral presentation at A.PH.A. conventions or submitted directly to the Editor for publication in THIS JOURNAL are eligible only if they meet the following criteria. Only those that measure up to these criteria can be considered; those that do not will be released immediately.

1. Timely—The topic must be of current interest to pharmacists in retail practice, hospital pharmacy, industry, education, or in government, or to personnel in some other related health field.

2. Informative—The subject matter may be factual, philosophical, or controversial, but it must convey to the listener or to the reader ideas or information which will be useful or beneficial to him or her as a member of the health professions.

3. Well Organized—The subject matter must be presented in a logical sequence, with each topic suitably disposed of in an acceptable framework. Inclusion of an outline is highly desirable.

4. Concise—Since space available in THE JOURNAL for publication of convention papers is limited, it is impossible to publish all papers, no matter how desirable they may be. Therefore, brevity and deletion of excess verbiage are powerful factors in influencing the Editor and reviewers while making a selection.

Facilitation of Publication

Publication of papers will be greatly facilitated if the authors of the papers will abide by the following requirements:

1. Submit a 250-word summary of the paper to the Editor of THE JOURNAL *before* the Convention.
2. Submit each paper complete with illustrations, *in duplicate*, typed, double-spaced, on $8^1/_2$ x 11 inch bond paper. One copy should be submitted to the Secretary of the Section, and one copy to the Editor of THE JOURNAL.
3. Titles and subtitles should be kept short.
4. A brief biography of the authors and their photographs should accompany the paper.

Public Relations

All news releases disseminated to the press, on behalf of an author, describing a paper to be presented at an A.PH.A. convention or to be published in THIS JOURNAL must be cleared through the A.PH.A. pressroom at the convention, or the Secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Help for Hungary

American pharmacy, at its own expense, has rushed desperately needed medical supplies to the sick and wounded Hungarian population. According to the Health News Institute, antibiotics, sulfa drugs, vitamins, vaccines, surgical dressings, and other life-saving drugs valued at more than $350,000 have been assembled and flown to Vienna, Austria during November.

Charles Pfizer & Co., Inc., Brooklyn, N.Y., *Merck & Company, Inc.*, Rahway, N.J., *Eli Lilly & Co.*, Indianapolis, *The Upjohn Company*, Kalamazoo, Mich., the *U. S. Vitamin Corp.*, New York, *White Laboratories, Inc.*, Kenilworth, N.J., *E. R. Squibb & Sons*, New York, N.Y., *Bristol Laboratories*, Syracuse, N.Y., *Lederle Laboratories*, Pearl River, N.Y., *Hoffmann-LaRoche, Inc.*, Nutley, N.J., *McNeil Laboratories*, Philadelphia, Pa., *Johnson & Johnson*, New Brunswick, N.J., and others responded promptly to the pleas of various relief organizations. In addition, sums of money were given by the pharmaceutical industry.

Formulation of a Stable and Palatable

Oral Suspension of Procaine Penicillin G*

by Gloria R. Sabatini and John J. Gulesich†

AUTHORS' SUMMARY

Studies of various formulas of procaine penicillin G suspensions lead to a more stable oral aqueous preparation. A suspension of procaine penicillin G containing 85,000 units per ml. in a vehicle base containing sodium gluconate 25%, sodium citrate 10%, and sorbitol 40%, suitably flavored, colored, and preserved, retains its palatability and stability for at least one year at room temperature.

PROCAINE PENICILLIN G has limited stability in aqueous media and heretofore could not be incorporated into an oral aqueous suspension of extended shelf life.

Swintosky *et al.*[1] in an earlier paper reported: "An oral aqueous vehicle may be prepared in which suspended procaine penicillin G may have a predictable shelf life far in excess of that observed in water alone." This was done by suppressing the solubility of procaine penicillin G with procaine hydrochloride and other substances. Their studies were conducted to evaluate and establish the quantitative effects of various additives on the solubility and stability of an aqueous procaine penicillin G system without attempting to prepare a pharmaceutically elegant product. Therefore a study was undertaken to translate these previously reported findings into an acceptable oral dosage form. A palatable preparation of this type would be useful in the pediatric and geriatric field and for the patient who cannot swallow tablets.

Vehicle A—Good procaine penicillin G stability was obtained with the vehicle used by Swintosky *et al.*[1] for quantitative studies. However, from their solubility suppression studies[2] these workers reported that the most effective aqueous vehicle contained the following ingredients:

Swintosky's Vehicle

	% w/v
Procaine hydrochloride, U.S.P.	2.0
Sodium citrate, U.S.P.	10.0
Citric acid, U.S.P.	0.2
D-Sorbitol	40.0
Sodium gluconate	25.0
Purified water, *q.s.*	

The work described in this paper was directed toward modifying this vehicle so that it possessed, in addition to good procaine penicillin G stability, all the other requirements of an acceptable oral liquid. Specifically, efforts were directed toward improving this vehicle with regard to taste, flavor, and viscosity.

VISCOSITY STUDIES

Acacia, pectin, sodium carboxymethylcellulose (low viscosity 25–50 centipoise), gelatin (type B), and tragacanth, in 0.05 to 1.0% w/v concentrations, were some of the suspending agents tested. Tragacanth (0.2% w/v) was selected as the most suitable because it was found to have the best suspending qualities for this type preparation. It was found that with tragacanth there was practically no separation of the suspension for several hours. On aging there was some settling but no packing at any time. The mixture re-suspended very readily.

FORMULA AND PALATABILITY STUDIES

Sweetening Agents—Insoluble saccharin, saccharin sodium and cyclamate sodium were tested in various concentrations (0.5–1% w/v) and combinations. It was found that a combination of insoluble saccharin and saccharin

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* Presented before the Section on Practical Pharmacy A.PH.A. Detroit Convention, April 1956.

† From the Research and Development Division of Smith, Kline & French Laboratories.

The authors are grateful to Dr. Robert E. Chamberlain and Joseph R. Guarini for conducting microbiological assays.

[1] Swintosky, J. V., Rosen, E., Robinson, M. J., Chamberlain, R. E., and Guarini, J. R., J.A.PH.A., *Sci. Ed.*, **45**, 34 (Jan. 1956).

[2] Swintosky, J. V., Rosen, E., Robinson, M. J., Chamberlain, R. E., and Guarini, J. R., *ibid.* **45**, 37, (Jan. 1956).

TABLE I—FLAVORS TESTED WITH VEHICLE A

Flavor	Concn., %	Source
Imitation wild cherry	0.02	Fritzsche
Imitation wild cherry	0.02	Fritzsche
Imitation chocolate	0.01	Fritzsche
Orange concentrate	0.02	Fritzsche
Anise oil, U.S.P.	0.00125	
Orange oil, U.S.P.	0.05	
Coumarin, N.F.	0.0015	
Anise oil, U.S.P.	0.00125	
Vanillin, U.S.P.	0.04	
Coumarin, N.F.	0.015	
Vanillin, U.S.P.	0.04	
Lemon oil, U.S.P., cold pressed	0.01	
Wild cherry, imitation (#16706)	0.04	Fritzsche
Pineapple, imitation–Pineapco type	0.01	Magnus, Mabee & Reynard
Lemon oil, U.S.P., cold pressed	0.01	
Menthol, U.S.P.	0.01	
Wild cherry, imitation (#16706)	0.04	Fritzsche
Pineapple, imitation–Pineapco type	0.01	Magnus, Mabee & Reynard
Anethol, N.F.	0.005	
Peppermint oil, U.S.P.	0.02	
Peppermint oil, U.S.P.	0.02	
Lime concentrate	0.02	Fritzsche
Compound cardamom spirit, N.F.	0.0083	
Peppermint oil, U.S.P.	0.02	
Peppermint flavor (E-1934)	0.02	Sealva
Imitation cherry flavor (E-1358)	0.04	Sealva
Vanillin, U.S.P.	0.02	
Coumarin, N.F.	0.006	
Pineapple, imitation–Pineapco type	0.01	Magnus, Mabee & Reynard
Lemon oil, U.S.P., cold pressed	0.04	
Wild cherry, imitation (#16706)	0.04	Fritzsche
Peppermint oil, U.S.P.	0.015	
Lime concentrate	0.02	Fritzsche

Flavor	Concn., % (a)	Concn., % (b)	Source
Peppermint oil, U.S.P.	0.02	0.02	
Imitation butter caramel	1.00	5.00	Alva
Sassafras oil, N.F., natural	0.05		
Lemon oil, U.S.P.	0.05		
Clove oil, U.S.P.	0.1		
Compound cardamom tincture, N.F.	6.5		
Aromatic syrup of eriodictyon, N.F.	0.33		
Cardamom oil, N.F.	0.002		Magnus, Mabee & Reynard
Clove oil, U.S.P.	0.050		
Sassafras oil, N.F., natural	0.025		
Lemon oil, U.S.P., cold pressed	0.025		
Wild cherry, imitation (#16706)	0.01		Fritzsche
Peppermint oil, U.S.P.	0.02		
Peppermint flavor (E-1934)	0.0333	0.0499	Sealva
Lime concentrate	0.016		Fritzsche
Peppermint oil, U.S.P.	0.01		
Lemon flavor with other natural flavors (E-1365)	0.025		Sealva
Imitation cherry flavor (E-1358)	0.042		Sealva
Coumarin, N.F.	0.03		
Chocolate oil, imitation, #1	0.02	0.02	Fritzsche
Peppermint oil, U.S.P.	0.01	0.02	
Peppermint oil, U.S.P.	0.02		
Vanillin, U.S.P.	0.03		
Custard flavor oil, imitation	0.02		Fritzsche
Peppermint oil, U.S.P.	0.02		
Chocolate oil, imitation, #1	0.01		Fritzsche
Custard flavor oil, imitation	0.02		Fritzsche

sodium, or cyclamate sodium, with the D-sorbitol already present in the vehicle, improved its taste. The saccharin sodium, or cyclamate sodium, masked the initial bitterness of the vehicle and that portion of the procaine penicillin G that was in solution, while the insoluble or undissolved saccharin masked the bitter aftertaste of the undissolved procaine penicillin G.

Flavoring Agents—Many flavors were tested in an effort to find a suitable flavor which would enhance further the palatability of the vehicle. Some of the flavors which were tested are listed in Table I. Of all these, a mint–imitation chocolate–imitation custard flavor was considered best and when tested clinically was favorably received.

The addition of thickening agents, sweeteners, and flavors to Vehicle A resulted in an "improved" formula.

Although the "improved" formula was significantly better tasting than the preparation made with Vehicle A, a slightly bitter, numbing taste, attributed to the procaine hydrochloride, was still noticeable. It was felt that if the procaine hydrochloride were lowered in concentration, or completely eliminated, there would be a significant increase in palatability. In addition, the possibility of undesirable side effects (cerebral stimulation, taste numbing) which had been known to occur with procaine hydrochloride, would be minimized.

Further modifications indicated that the addition of 5% (w/v) kaolin eliminated the grittiness of the formula and produced a smooth, creamy vehicle. An even smoother suspension was obtained by using procaine penicillin G with a particle size of 5–25 microns. However, this fine particle size made the

TABLE II—STABILITY OF 50,000 U./ML. SUSPENSION IN VEHICLE B

Procaine HCl Added w/v	Storage Conditions (Dark)	Penicillin Potency, Per Cent *Storage Periods, Days*					
		7	*14*	*21*	*30*	*109*	*187*
0.0	R.T.	97	84	107	111	101	90
	37°C.	..	..	..	..	86	77
	43°C.	98	89	107	96	..	..
	56°C.	..	77	..	..	..	..
0.5	R.T.	86	92	93	109	98	96
	37°C.	..	..	..	..	91	76
	43°C.	93	73	91	94	..	..
	56°C.	..	74	..	..	..	..
2.0	R.T.	82	80	94	97	79	85
	37°C.	..	..	..	..	87	78
	43°C.	83	74	84	103	..	..
	56°C.	..	68	..	..	..	..

TABLE III—STABILITY OF 85,000 U./ML. SUSPENSION IN VEHICLE B

Storage Conditions (Dark)	Penicillin Potency, Per Cent *Storage Periods, Days*													
	3	*15*	*26*	*30*	*36*	*47*	*71*	*82*	*92*	*103*	*183*	*194*	*297*	*396*
R.T.	110	..	111	..	102	112	..	116	..	112	..	106	95	111
37°C.	..	..	..	..	..	..	97	..	88	..	71	..	..	..
43°C.	..	99	..	91	96	..	73	..	63	..	..	..	..	..

product quite bitter tasting. The bitterness was overcome by using procaine penicillin G with a particle size of 40–60 microns.

The elimination of the procaine hydrochloride, along with the other modifications, resulted in Vehicle B.

Vehicle B

Sodium citrate, U.S.P.	10.0
Sodium gluconate	25.0
D-Sorbitol	40.0
Saccharin, U.S.P. (insoluble)	0.5
Saccharin sodium, U.S.P.	0.5
Peppermint oil, U.S.P.	0.02 v/v
Chocolate oil, imitation #1 (Fritzsche)	0.01 v/v
Custard oil flavor, imitation (Fritzsche)	0.02 v/v
Kaolin, N.F.	5.0
Tragacanth, U.S.P.	0.2
Methylparaben, U.S.P.	0.0625
Propylparaben, U.S.P.	0.0125
Color	*q.s.*
Purified water	*q.s.*

Vehicle B had a *p*H of 6.2, which was well within the range (6.0–6.8) for maximum stability of aqueous solutions of procaine penicillin.[3]

STABILITY STUDIES

Suspensions of procaine penicillin G (50,000 units per ml. and 85,000 units per ml., 40–60 microns) were made in Vehicle B. Comparative stability studies were made with 0.0%, 0.5%, and 2.0% procaine hydrochloride added to Vehicle B containing 50,000 units per ml. of the procaine penicillin.

Samples of the above suspensions were stored in stoppered, 60-ml., wide mouth amber bottles in dark rooms having temperatures of 25°C., 37°C., 43°C., and 56°C. The samples were closely observed for evidences of physical change (*i.e.*, taste, odor, color, suspendability, etc.) and assayed periodically, in duplicate. The assay method was microbiological and was a modification of the Food and Drug Administration agar plate diffusion method.[4]

Table II illustrates the stability of procaine penicillin G (50,000 units per ml.) in Vehicle B with 0.0%, 0.5% and 2.0% w/v procaine hydrochloride added. It shows that after six months at room temperature (25°) and 37° and after 2 weeks at 43° and 56° there was no apparent difference in stability between the formulas with and without the procaine hydrochloride.

Table III illustrates the stability of the procaine penicillin G (85,000 units per ml.) in Vehicle B. It shows that there is no loss of penicillin potency after thirteen months at room temperature (25°), ten weeks at 37°, and five weeks at 43°.

The suspension was still physically satisfactory (odor, taste, resuspendability, etc.) after thirteen months' storage at room temperature (25°).

[3] Pratt, R., and Dufrenoy, J., *Antibiotics*, 2nd ed., J. B. Lippincott Co., Philadelphia, Pa., 1953, p. 109.

[4] *Compilation of Regulations for Tests and Methods of Assay and Certification of Antibiotics and Antibiotic-Containing Drugs*, U.S. Department of Health, Education, and Welfare. Food and Drug Administration, V.I. Section 141a.1, page A-1 (1954).

FOR
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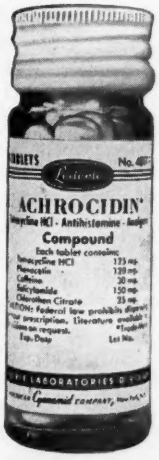

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Tools of the Apothecary

10. LOZENGES, TABLETS, AND CAPSULES

1. Islamic lozenge mold, ca. 1400 A.D., with inscription, "In the Name of Allah, the Merciful, the Compassionate."

2. Dutch pastil press, ca. 1700 A.D., is inscribed, "The widow C. H. Woerden at Utrecht" and is of lead.

*By George Griffenhagen**

Solid medicinal preparations in the form of small discs, cylinders, or tablets have been used since antiquity. They were called *troches* from the Greek word "trochos" meaning round or circular, and were subsequently called *pastils* in Latin and *lozenges* in English. According to Celsus, pastils were made by rubbing dry medicaments with wine or vinegar and cutting the individual pastils from the plastic mass. This process remained the same through the centuries, except that mucilage, juices, and syrups were substituted for wine and vinegar.

One of the most famous early lozenges was that of "terra sigillata," a product originally composed of earth from the Island of Lemnos and goat's blood. About 500 B.C., Lemnian earth was traditionally excavated at a ceremony held each year on the sixth of May, carried to a nearby village, washed and rolled to the proper thickness, and cut into lozenges impressed with a significant seal (Fig. 3). The first seal is said to have been in the form of a goat, but the head of the goddess Diana, the likeness of Christ, and the Turkish half-moon were subsequently employed.

In the middle ages a variety of pastil or lozenge presses were employed. One of the most elaborate is an Islamic lozenge mold preserved in the Tokapi Seraglio Museum in Istanbul, Turkey, dating from about 1400 A.D. Impressed upon the face of each mold (Fig. 1) is the inscription: "In the name of Allah, the Merciful, the Compassionate." A Dutch pastil press of a later period (Fig. 2) is to be seen in the History of Science Museum at Leiden, Holland. The bottom plate of each mold is inscribed as follows: "De Wede C. H. Van Woerden a Utrecht" (The widow C. H. Woerden at Utrecht).

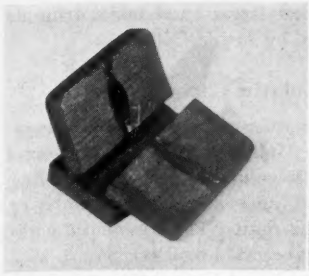
In 1856, Edward Parrish described an apparatus for rolling and cutting lozenges consisting of a rolling-board, wooden roller, and cutting punch. During the ensuing 20 years no less than a dozen lozenge machines were patented in the U.S. In 1879, F. L. Slocum introduced an adjustable lozenge board which, even though not marketed today, is still described and illustrated in *Remington's Practice of Pharmacy* for the prescription pharmacist who wishes to construct his own. Other lozenge boards of note were introduced by F. E. Harrison in 1880, and Wallace Procter in 1894. For cutting lozenges a variety of punches were devised, some even provided with a die which stamped a seal upon the lozenge in addition to cutting it.

Compressed Tablets

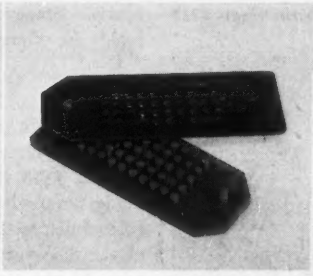
The term *tablet* was, according to Urdang, first used by Jean de Renou in 1608, when the Latin term "tabella" was applied to a special type of troche. However, Renou's tablet was still a troche, made by molding from a previously moistened troche mass. It was not until 1843 that William Brockedon in the County of Middlesex, England, introduced the pharmaceutical tablet which we know today. On December 8, 1843, Brockedon was granted English Patent No. 9,977 under the title of "Shaping Pills, Lozenges and Black Lead by Pressure in Dies." At an early date it was observed that pills and lozenges made with adhesive material often interfered with the stability or the desired action of the drug. The underlying object of Brockedon's invention was to compress medicinal ingredients

* Curator, Division of Medicine and Public Health, Smithsonian Institution, Washington 25, D.C., and Consultant to the American Pharmaceutical Association Museum.

3. Preparing "terra sigillata" on the Greek Island of Lemnos about 500 B.C., as depicted by Robert Thom in the Parke Davis History of Pharmacy in Pictures series



4. Dundas Dick gelatin capsule-making device was patented 1865. The original Patent Office model is on view at the Smithsonian.



5. Robert Fuller introduced the tablet triturate apparatus in 1882. Today's mold is almost identical with his design. Courtesy Smithsonian.

6. This gelatin capsule filler patented by Ralph Walsh, in 1886 was subquently manufactured and sold by Parke Davis. Courtesy Smithsonian.

without the use of liquid adhesive agents commonly employed in pills and lozenges. The product resulting from this process was known for years as "compressed pills," more recently as compressed tablets.

As revolutionary as Brockedon's invention was, it took time before "compressed pills" found the reception they deserved. In 1872, for example, Professor Rosenthal of Germany described a "compressed pill" machine invented by himself in the conviction that he was the first to have devised such an apparatus. On the other hand, those who were familiar with the new "compressed pills" spoke in glowing terms about them. As an example, the famous Commodore Perry, who had become acquainted with the product in London, requested in 1854 that the New York druggist E. Milhau import some as he "was very anxious to take some of these medicines with him on his trip to Japan."

The manufacture of "compressed pills" in America was commenced by Jacob Dunton, a wholesale druggist of Philadelphia about 1864. Dunton had constructed a machine similar to Brockedon's apparatus for compressing "pills," and by 1869 Dunton placed his "compressed pills" on the market. Both Brockedon's Dies and Dunton's "Pill" Machine, which was patented in the U.S. in 1876, consisted simply of a compression cylinder with a lower die. After the material is put in the cylinder, the top die is inserted and struck a sharp blow with a mallet, thereby compressing the material. The upper die and the compressed tablet are then removed and the process repeated. Joseph Remington devised a similar machine in 1875 with which he claimed "the retail druggist could manufacture his own medicine called for on prescription" (Fig. 9).

The German Professor Rosenthal was the first to use the screw press as a means of tablet compression in 1874, and its highest development was reached by Carl Engler's (Austria) Tablet Press in 1907 which automatically ejected the tablets after compression. The first tablet machine to make use of the lever for obtaining pressure was the Smedley "compressor," invented by Bennett L. Smedley of Philadelphia in 1879. It was very similar to Remington's machine except that it substituted a lever compression device for the mallet. Other popular American lever compression tablet machines for use by prescription pharmacists included the Perfection Tablet Machine of 1895; the Whitall, Tatum Tablet Machine of 1895 (Fig. 8); the Little Diamond

(Continued on page 812)

7. No longer in use today in America, the cachet was introduced by Parisian apothecary Stanislaus Limousin in 1873. U.S. patent model at Smithsonian.

8. Among the early lever compression tablet machines introduced in the U.S. is the Whitall, Tatum Company's, patented July 2, 1895. Smithsonian.

Tools . . . . . (*from page 811*)

9. Joseph P. Remington tablet press, complete with wood mallet, is at the Museum of the Philadelphia College of Pharmacy and Science. Designed so "the retail druggist could manufacture his own medicine," the press was introduced in 1875.

Tablet Machine of 1896; and the Freck Tablet Machine of 1902.

Henry Bower, working for John Wyeth of Philadelphia, produced the first rotary tablet machine in 1872. Two years later Thomas J. Young obtained a U.S. patent on a semiautomatic tablet machine, rights to which were purchased by Wyeth. The first patent for a fully automatic tablet machine was issued to Joseph A. McFerran in 1874. One of McFerran's subsequent patents (1891) served as the basis for the Crown Tablet Machine manufactured by H. K. Mulford commencing in 1895. The Eureka Tablet Machine of a very similar design was introduced around 1900 by F. J. Stokes. The latter is still sold today by Stokes as being "ideal for small production of tablets." Arthur Colton also offers a hand-operated Tablet Press No. 301 for "limited manufacturing operations."

Tablet Triturates

The tablet triturate was originated by Robert M. Fuller in 1878. Fuller's "tablet triturates" consisted of triturations of metallic, mineral, and vegetable matter, mixed into paste with alcohol or water, and molded into the size and shape desired. In 1882 Fuller described a form of tablet triturate mold which is practically identical to those still obtainable today. Such tablet triturate molds (Fig. 5) are available in hard rubber from Armstrong Cork Company and John M. Maris. Somewhat larger hand tablet triturate molds are offered by Arthur Colton.

Gelatin Capsules

The gelatin capsule was invented by François Achille Barnabe Mothes, a French pharmacist of Paris in 1833. Experiments had evidently been made before but no evidence of success is recorded before this date. The first official notice of the discovery occurred on December 6, 1833, when Mothes and Joseph Gerard August Dublanc applied for a French patent. The patent was granted on March 25, 1834, and an improvement upon the patent was granted December 4, 1834.

Mothes and Dublanc

Mothes and Dublanc described their procedure for preparing gelatin capsules as follows:

"They are made by means of an instrument consisting of a hollow, elongated cone four or five inches long, and terminated by a tube, to which is attached a small pouch made of fine skin. To use this instrument, a sufficient amount of mercury is poured into the cone to fill the pouch, forming a solid ball about the size of a small olive. The pouch is then plunged into a warm concentrated solution of gelatin for a short time and then dried in a heated stove. The cone is then reversed causing the mercury to flow out, and collapsing the pouch so that the capsule may be removed. Into this was introduced the medicine and the capsule was closed with a drop of concentrated warm gelatin solution."

There is no question but that Mothes' invention, known as "Capsules gelatineuses de Mothes," was welcomed at once as a safe method for administering nauseating medicines. As early as 1836 the gelatin capsule was introduced into America when H. Planten, a Hollander by birth, emigrated from Paris and established a capsule business in New York City. Planten's capsules were made according to the French process and were sold under the name of "Mothes capsules."

Hard Gelatin Capsules

The hard shell gelatin capsule consisting of two parts, the one part telescoping over the other half, is credited as having been invented by James Murdoch of London, England. Murdoch received British patent No. 11,937 on November 2, 1847. Dundas Dick obtained a U.S. patent for a cone-shaped gelatin capsule in 1865 (Fig. 4). However, the first person to manufacture capsules, as now used, by machinery on an extensive scale was F. A. Hubel of Detroit. He secured his first (of many) patents for a capsule machine on February 13, 1877, although he had already manufactured and sold empty capsules through Parke, Davis and Company as early as January 1875.

Capsule Filling Machines

The advent of the empty gelatin capsule awakened the special interest of inventive genius, and numerous devices were marketed for rapidly filling these empty capsules. In 1878 Thomas Whitfield of Chicago patented a capsule filling machine consisting of a funnel through which the powder was introduced to the capsule, a plunger attached to a recoil spring for packing the capsule, and a spring opening for removing the filled and capped capsule. In 1886 Ralph Walsh of Washington, D.C., received a U.S. patent on a capsule filler which was subsequently manufactured and sold by Parke Davis (Fig. 6).

Other widely used capsule fillers employed by prescription pharmacists during the close of the 19th and the early 20th centuries included the Davenport, the Reymond and the Ihrig capsule fillers. The Davenport was the simplest, consisting of little more than a small metal funnel and a plunger made of hard wood. The Reymond and Ihrig capsule fillers consisted of a holder for one or more capsules at a time and a funnel arrangement for filling each capsule.

Today several capsule filling machines are available to prescription pharmacists. The Cap-Fill Machine, manufactured by Cap-Fill Products Company of Ardmore, Pa., is a machine made of aluminum and duPont Lucite enabling the pharmacist to fill and cap 36 size 0, 1, and 2 capsules "in less than two minutes." Chemical and Pharmaceutical Industry Company of New York City and the Del-Tay Manufacturing and Engineering Company of Baltimore, Md., offer several models of capsule fillers. The Universal Model is designed for filling 24 #0, 1, 2, or 3 capsules per operation, while Model #300 fills 96 (#00 or 0) or 144 (#1 or 2) capsules per operation.

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Branches . . . . . *(from page 785)*

University of Puerto Rico—Program speakers for the October 31 meeting included three faculty members. *Dean Torres Diaz* spoke on the importance of supporting the newly formed Puerto Rican Foundation for Pharmaceutical Education, and *Dr. Leo B. Lathroum* and *Dr. Estebán Nuñez* talked briefly on the need for contributions to the A.PH.A. Building Fund.

University of South Carolina—Two Upjohn films, "The Greatest Good" and "The Span of Life," were shown at the October 18 meeting of the Branch.

University of Southern California–*Paul Parker*, President of the American Society of Hospital Pharmacists and Director of the Division of Hospital Pharmacy of the A.PH.A., addressed the October 25 meeting on "Opportunities in Hospital Pharmacy."

University of Utah—*Dr. Burns Crookston*, Assistant Dean of Students, welcomed new students at the October 12 meeting. "Founders' Day" was the topic of the address given by *Dean L. David Hiner*. Faculty Advisor *Dr. Ewart W. Swinyard* encouraged students to join and participate actively in the A.PH.A.

University of Washington College of Pharmacy—At the November 6 meeting member *Robert Spence* gave a report on the meeting of the Student Branches of District No. 7 held in Missoula, Mont.

University of Wisconsin—The Parke Davis film "Pharmacy's Heritage" was shown at the October 10 meeting with company representative *Carl Rothmeyer* in attendance. The November 11 meeting was addressed by *Dr. William S. Apple* of the College faculty, who spoke on "The Changes in the State Internship Program."

Wayne State University—The Branch held its annual Fall Mixer and Membership meeting in conjunction with a celebration of National Pharmacy Week on October 9. A.PH.A. President *John A. MacCartney* and *Henry Maicki*, President of the Michigan Branch of the A.PH.A., were guest speakers on "Membership in the A.PH.A. after College" and "Ethics in Pharmacy," respectively.

Student Branches in Districts 7 and 8 Meet

Student Branch representatives of colleges of pharmacy in District 8 met in Las Vegas, Nev., on October 5 and 6 in conjunction with the meeting of boards of pharmacy and colleges of pharmacy of that district.

Newly elected officers of District 8 are: *Robert Rudolph*, University of Southern California—President; *Keith MacDonald*, University of Utah—Vice-President; *Nancy Winemen*, University of California—Secretary.

Montana State University College of Pharmacy in Missoula was host to Student Branches of District 7 on October 25-26. *Donald Novotny*, Idaho State College, was elected President of the district for the coming year. Other officers are *Cal Ness*, Montana State University—Vice President; *Rita Potter*, Idaho State College—Secretary; *Bob Spence*, University of Washington—Treasurer.

MEMBERSHIP RECORDS

THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

CALIFORNIA

Barr, Wesley W., Sanger
Bird, Rolland M., San Bernardino
Charshah, A. Martin, Fresno
Gilreath, George M., Sanger
Selland, Harold V., Fresno
Sorbello, Joe C., Riverside
Topham, Albert F., Fresno

COLORADO

Mehta, Himat R., Boulder

CONNECTICUT

Noonan, Edward C., Stafford Springs
Pember, Carleton H., III, Trumbull

DISTRICT OF COLUMBIA

Fortune, Francis C.
Schwartz, Samuel M.

FLORIDA

Darling, Roy L., Sebring
Lovitz, J. L., Clearwater
Stafford, J. J., Jr., Sarasota
Stuart, Glenn K., Fort Lauderdale

GEORGIA

Anderson, Mal T., College Park
Cress, H. G., Monticello
Goff, Roy D., Jackson
Hames, Carter A., Atlanta
Herrin, H. M., Winder
Stickle, C. J., Savannah
Tibbs, J. W., Jr., Atlanta
Turpen, L. R., Jr., Clarkesville

IDAHO

Barnett, Clifford E., Nezperce

ILLINOIS

Carson, Joseph A., Danville
Dalton, Edward R., Waukegan
Fouts, Harry J., Hinsdale
Gomoll, Allen W., Chicago
Newberry, Eugene R., Danville
Thetford, George M., Pinckneyville

INDIANA

Davis, Brooks E., Madison
Ecanow, Bernard, Indianapolis
Kuzel, Norbert R., Indianapolis

IOWA

Ballensky, John I., Sigourney
Thompson, Mildred W., Cherokee

KANSAS

Bales, Gerald A., Wellington
Barker, James R., Jr., Hutchinson

LOUISIANA

Miano, Samuel J., Reserve

MARYLAND

Doorenbos, Norman J., Baltimore
Levin, Benjamin, Baltimore

MASSACHUSETTS

Halperin, Norman, Springfield
Pecci, Anna M., Brockton

MICHIGAN

Baskin, Ben, Detroit
Binson, S. George, Center Line
Hecker, Victor, Oak Park
Karp, Aaron L., Detroit
Karp, Samuel, Detroit
Smith, George R., Detroit

MISSISSIPPI

Clark, C. M., Merigold

MISSOURI

Heckemeyer, Adam F., St. Louis
Steinhaus, Henry R., Kansas City
Wesner, Rodney E., Windsor

MONTANA

Corkish, Robert A., Anaconda

NEBRASKA

Seigfreid, Arthur C., Omaha

NEW HAMPSHIRE

Haddad, Louis S., Nashua

NEW JERSEY

Barden, Samuel, Ridgefield Park
Doctofsky, Roy S., Perth Amboy
Fiscella, Joseph, Jersey City
Fonder, Edward, West Englewood
Lennard, Martin, Rochelle Park
Preston, Ted D., Short Hills
Silverman, Harold I., East Orange
Simone, Anthony L., Hasbrouck Heights

NEW MEXICO

Markham, John D., Santa Fe

NEW YORK

Henkin, Samuel, New York City
Kahner, Paul, Brooklyn
Mack, Samuel H., Oswego
McPherson, Gordon E., Wilson
Niesciur, Eleanor, Dunkirk

NORTH CAROLINA

Cobb, James L., High Point

NORTH DAKOTA

Arndt, Jack R., Fargo

OHIO

Cole, Henry C., Cleveland
Crocetti, Robert A., Columbus
Egbert, Albert H., Portsmouth
Gaydos, Donald M., Cleveland
Reynolds, James S., Barberton

OREGON

Hatch, Wayne M., Molalla

PENNSYLVANIA

Aitchison, John B., Philadelphia
Boyle, Thomas M., North East
Fleming, Blanche B., Pittsburgh
Mancinelli, Louis, Glenside
Marcus, Bernard, Monongahela
Miller, Rupert P., Montgomery
Mosemann, Charles B., Lancaster
Swope, Harold H., York

RHODE ISLAND

Colucci, Dominic, Woonsocket

SOUTH CAROLINA

McCrackin, F. Alex, Bamberg

TENNESSEE

Sanders, E. M., Chattanooga

TEXAS

Robertson, Henry P., Timpson
Smith, Arthur M., McKinney
Willmann, Ferd, Mineral Wells

VIRGINIA

Bloxton, Francis E., Powhatan
Eppes, Thomas W., Amelia
Ferguson, Donald O., Warrenton

WASHINGTON

Frambach, Leslie J., Richland
Larson, Muriel S., Vancouver
Neal, Otis W., Pe Ell
Plein, Joy B., Seattle
Seffernick, Robert S., Seattle
Watson, Hattie V., Spokane

WEST VIRGINIA

Garrett, Samuel J., Harpers Ferry

WYOMING

Vandine, Bernard W., New Castle

POSSESSIONS

Galloway, Earl G., Wahiawa, Oahu, Hawaii

CANADA

McNeil, Marcel C., Montreal

INTERNATIONAL

Bonfanti, Roberto E., Buenos Aires, Argentina
Hart, Leopoldina, Havana, Cuba
Vallier, Miguel, Miraflores-Lima, Peru

Deceased Members

Goldberg, Jacob J., Richmond Hill, N.Y., Sept. 29, 1956
Mills, Evelyn O., Phoenix, Ariz., Aug. 19, 1956
Sister M. Benedicta Kuyven, Jefferson City, Mo.

Mrs. Elmer L. Hammond, wife of the Dean of the University of Mississippi School of Pharmacy, died suddenly on November 9, 1956, at her home in Oxford, Mississippi.

Mrs. Alice M. Koch (nee Cope) wife of the late Dr. Julius A. Koch, former Dean of the University of Pittsburgh College of Pharmacy and a Past President of the AMERICAN PHARMACEUTICAL ASSOCIATION, passed away at Ocala, Fla., on October 22, 1956.

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Federal and State Actions

FDA Actions

Roundup

The FDA reports that during their fiscal year 1956 (July 1, 1955 to June 30, 1956) the following actions were taken:

Domestic

Establishments inspected	3,215
Samples collected	7,822
Recalls monitored	20
Seizures	142
Criminial prosecutions instituted, of which violative sales of prescription drugs numbered 114	130
Injunctions requested	3

Import

Shipments detained	2,409
Shipments inspected	3,429
Samples collected	2,401

Nonlegend Drugs

The following tabulation includes those drugs which the Food and Drug Administration has exempted from the prescription dispensing requirements of the Federal Food, Drug, and Cosmetic Act under the Durham-Humphrey Amendment. The first drug was released January 22, 1955, and the total as of November 30, 1956, is 14.

N-acetyl-*p*-aminophenol
Sodium gentisate (*Gentisan*, Crookes; *Gentasol*, Gold Leaf)
Isoamylhydrocupreine with zolamine hydrochloride (ointment and suppositories)
Phenyltoloxamine dihydrogen citrate (*Bristamin*, Bristol)
Oxytetracycline hydrochloride with polymyxin B sulfate (topical)
Meclizine hydrochloride (*Bonamine*, Pfizer)
Diamthazole dihydrochloride (*Asterol*, Hoffmann-LaRoche)
Dicyclomine hydrochloride (*Bentyl*, Merrell)
Neomycin sulfate (nasal spray and drops)
Sodium fluoride (dentifrice)
Hexadenol (*Hexacose*, Lincoln) (*Hexathricin Aeropak*, Lincoln)
Sulfur dioxide (topical) (*Clinicide*, Angier)
Doxylamine succinate (*Decapryn*, Merrell)
Dextromethorphan hydrobromide (*Romilar*, Hoffmann-LaRoche)

These preparations are exempted under specified conditions of labeling, dosage, length of use, and other requirements. The labeling of a drug exempted from prescription dispensing requirements which uses a prescription caution statement or any other statement or suggestions that such drug is limited to prescription use may constitute misbranding. Also, a drug exempted from the prescription requirement must be handled like a "new drug" within the meaning of the Act.

Over-the-Counter Sales (September Actions)

Chicago, Ill.—Selling hormones and Aureomycin without physicians' prescriptions. Firm and president-manager fined $300 each and court costs of $39.

New Orleans, La.—Refilling prescriptions for barbiturates, paraldehyde, and sulfonamides without physicians' authorizations. Firm, employer, and employee fined $100 each; charges against second employee dismissed.

Boston, Mass.—Selling amphetamine without physicians' prescriptions. Fined $500, given a 6-month suspended jail sentence, and placed on probation for 1 year.

St. Louis, Mo.—Selling amphetamine, barbiturates, and sulfonamides without physicians' prescriptions. Sentenced to serve 60 days in jail.

St. Louis, Mo.—Selling amphetamine, barbiturates, and thyroid without physicians' prescriptions. Manager-pharmacist fined $3,000; employee-pharmacist fined $500; clerk fined $1,000.

Cleveland, Ohio—Selling amphetamine and barbiturates without physicians' prescriptions. Firm given a $100 suspended fine; individual sentenced to serve 6 months and 1 day in jail.

Organic Phosphate Pesticides—Until further notice, the FDA will require that any petition for a tolerance or tolerances for an organic phosphate pesticide must include evidence showing the toxicity of the compound when fed to test animals with each of the other organic phosphate pesticides that has a tolerance at that time. This is required because it has been shown that some members of this class of pesticides potentiate the toxicity of others. Such synergistic action increases the hazard.

Tolerance for Residues of Oxytetracycline—The FDA has established a tolerance of 7 parts per million for residues of oxytetracycline in or on uncooked poultry. It has been shown that cooking destroys residues of oxytetracycline that are within this tolerance.

Federal Trade Commission

Dolcin—The Dolcin Corporation, engaged in the sale of Dolcin intended for the relief of pain accompanying arthritis and rheumatism, has been charged with paying cash promotional allowances to certain favorite customers but not to others competing with them and making promotional allowances to customers on conditions restricting their right to enter into promotional agreements with its competitors. The FTC has issued a Cease and Desist Order.

Kedvale Pharmacal Co., Michael J. Reiser, Alvah T. Martin, and M. J. Gleason—This firm and its officers were ordered to cease advertising falsely that "Sanforin" is a new discovery and is an adequate, effective, reliable treatment, and cure, and will effect long-lasting relief from arthritis, rheumatism, neuritis, or sciatica. [*Fed. Reg.* **21**, 7933 (1956).]

Public Health Service

Poliomyelitis Vaccine—Additional standards have been established for poliomyelitis vaccine, including a change in the dating regulations. The expiration date shall be no more than six months after either the date of manufacture, as defined in par. 73.78a, or the date of issue from cold storage. Such date of issue shall not be more than six months after such date of manufacture, and the product prior to issue shall be kept constantly at a temperature not exceeding 10°C. [*Fed. Reg.* **21**, 9227(1956).]

Treasury Department

Dihydrocodeine (Paracodine, Parzone, etc.)—The Bureau of Narcotics has recently ruled that this drug is permissible in exempt preparations in quantities not exceeding one-half grain per avoirdupois or fluid ounce of the preparation.

Book Reviews

Industrial Vision

By H. W. Hofstetter, Chilton Company, Philadelphia, 1956. x +189 pp. $10.

Within the last 15 years care of vision in industry has become a highly important facet of health programs. Recognizing this fact, the author of this book has written a brief text intended primarily for use in undergraduate optometry courses dealing with industrial vision problems. However, there is much up-to-date reference material of value for many others concerned with public health, including industrial physicians and nurses, human engineering psychologists, safety directors, personnel managers, insurance agents, and government agencies responsible for visual welfare and safety. Reference libraries in industry, academic institutions, and statistical organizations will all need copies.

Two of the six chapters are devoted to vision and ability to drive automobiles. Tests are described and the relation between driving ability and vision is discussed with interesting graphs. Other subjects include industrial eye hazards and protection, visual testing in industry, vision and industrial efficiency, and industrial compensation for loss of vision. The text is well organized, carefully documented, and adequately illustrated.

1956 Modern Medicine Market Guide

Modern Medicine Publications, 84 South 10 Street, Minneapolis 3, Minn. 194 pp. $10.

Gives statistics on population, drug stores, physicians and their purchases, prescription sales, hospital purchases, etc., by county and state, in addition to articles on: prescription trends and seasonal variations; incidence of illness; physicians' patient load, movement of physicians, marketing and promotion of pharmaceuticals, etc.

BOOKLETS

Federal Benefits Available to Veterans and Their Dependents

From the Veterans Administration Information Service, Washington 25, D.C. Free. 14 page chart with index.

Glycerine—Terms, Tests, Technical Data

From the Glycerine Producers' Association, 295 Madison Avenue, New York 17, N.Y. Free. The 19 page booklet describes commercial grades, testing, storage requirement, etc.

Hospital Employee Handbook

From Charles M. Allmand, University Hospital, 1313 East Ann Street, Ann Arbor, Mich. Free to hospital staff members. A 28-page, illustrated guide.

Rauwolfia and Its Alkaloids—Bibliography

From S. B. Penick & Co., 50 Church Street, New York 8, N.Y. Free. A 50-page compilation of approximately 800 references from several hundred domestic and foreign journals covering the chemistry, pharmacology, pharmacognosy, and therapeutic uses.

Refined Milk Proteins

From Crest Foods Company, Ashton, Ill. Free. An 11-page description of protein therapy for the geriatric, infant, and pregnant patient; and in obesity, burns, infections, etc.

Round Table on State Health Councils

From the National Health Council, New York 19, N.Y. 50¢. 36 page booklet explains why's and how's of organization and state-wide results.

Sodium Succinate As an Adjunct in Psychiatric Therapy

From The New York Quinine & Chemical Works, Inc., 50 Church Street, New York 8, N.Y. Free. 12-page preliminary report on use of the drug alone and in combination with barbiturates and reserpine to counteract depression.

Some Straight Facts about Losing Weight

From E. R. Squibb & Sons, 745 Fifth Avenue, New York 22, N.Y. Free. Designed for the retail pharmacy customer.

Trading Stamps and Premium Credit Plans

Batten, Barton, Durstine & Osborn, Inc., 383 Madison Avenue, New York 17, N.Y. Survey of 1,000 housewives in the Syracuse, N.Y., area. It was found that 80% save trading stamps or other premium credits; 9% of housewives who get premium credits obtain them from drug stores.

Why the 40-Plus Patient Needs More Vitamins

From Merck & Co., Inc., of Rahway, N.J. Free. Contains medical explanation, selected abstracts, and bibliography.

FILMS

Design for Life and Other Career Films

Available on loan without charge from Sterling-Movies U.S.A., Inc., 205 East 43 St., New York 17, N.Y. The American Association of Colleges of Pharmacy and the American Foundation for Pharmaceutical Education present 2 color-sound films and a slide film. **Design for Life,** *16 mm., 19 min.* Shows choice of pharmacy careers available to a young man. **Time for Tomorrow,** *16 mm., 20 min.* Documentary on pharmacy student life. **Pharmacy Program of Study,** *silent slidefilm in color, 60-frame.* College scenes and explanations.

For More Tomorrows

16 mm., sound and color, 27½ min. Available from Film Library, Lederle Laboratories, Pearl River, N.Y. Describes research and production operations around the theme of a child newly recovered from pneumonia.

Pediatric Anesthesiology

16 mm. color and sound film, 20 min. From E. R. Squibb & Sons, 745 Fifth Avenue, New York 22, N.Y. Free to medical groups. A growing awareness of the child and particularly the infant as physiologically a different individual from the adult.

The Rival World

Produced by Stuart Legg for the Shell Oil Company. 16 mm., in color, 27 min. From Shell Film Library, 50 West 50 Street, New York, N.Y. The New York Times reports: "A stunning documentary showing how the World Health Organization wages scientific war on destructive insect life . . . truly remarkable nature photography.

The Secrets of the Heart

Produced by M.P.O. Productions for the American Heart Association. 16 mm., 29 min. From the A.H.A. Film Library, 13 East 37 Street, New York, N.Y. The New York Times reports, "A worthy documentary on science vs. heart disease, featuring key researchers in the field."

A Short Vision

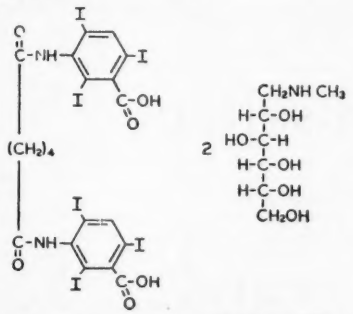
Produced by George K. Arthur. 16 mm., color, 7 min. From Brandon Films, Inc., 200 West 57 Street, New York, N.Y. The threat of atomic annihilation in animated sequence. "Admirable but not for the meek," says the New York Times.

To Your Good Health

Produced by Transfilm for the National Wholesale Druggists' Association; written by LIFE Magazine. Color and sound slidefilm, 17 min. Available from NWDA, 60 East 42 Street, New York 17, N.Y. A tribute to the nation's 96,000 licensed pharmacists, drug manufacturers, drug wholesalers and 50,000 drug stores.

New and Nonofficial Remedies

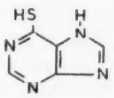
IODIPAMIDE METHYLGLUCAMINE; Cholografin Methylglucamine (Squibb); The bis N-methylglucamine salt of 3-3'-(adipoyldiimino)-bis[2,4,6-triiodobenzoic acid].



Actions and Uses. The methylglucamine salt of iodipamide is indicated for the same purposes and is subject to the same precautions as the sodium salt. The drug provides the same degree of visualization of the biliary tract as the sodium salt, but it can be given as a more concentrated solution.

Dosage. Iodipamide methylglucamine is administered intravenously. The usual dose for adults is 20 cc. of a 40% solution (8 Gm.), which is the approximate equivalent of 40 cc. of a 20% solution of the sodium salt.

MERCAPTOPURINE; Purinethol (B. W. & Co.); 6-Purinethiol.



Actions and Uses. Mercaptopurine is an analogue of the nucleic acid constituent, adenine, and the purine base, hypoxanthine. It is an antagonist to purine metabolism and thus acts by interfering with nucleic acid biosynthesis. Its pharmacological actions are related to a cytotoxicity that is chiefly manifest in tissues with a high rate of nucleic acid metabolism. Thus, hypoplasia of the bone marrow and ulceration of the gastrointestinal epithelium are the outstanding toxic effects of large doses.

Mercaptopurine is useful for the treatment of acute leukemia. Although it does not affect the eventual fatal outcome of the disease, judicious use of the drug has resulted in temporary remissions and prolongation of life in a substantial proportion of patients. In acute leukemia, children generally respond more favorably to the drug than do adults. Remissions may be either complete or partial and vary in duration from only a few weeks to months. Although choice of a chemotherapeutic agent for the treatment of acute leukemia is frequently governed by previous experience, most hematologists prefer the folic acid antagonists and/or hormone administration for initial therapy. When the response to these agents is no longer satisfactory, mercaptopurine is then substituted; however, it can be used to initiate therapy. Like all other chemotherapeutic agents, mercaptopurine becomes less effective in subsequent courses of therapy. In acute leukemia in children, the undifferentiated stem cell or lymphoblastic types respond somewhat better to the drug than do the granulocytic and monocytic types. In many cases, however, cellular differentiation is difficult or impossible. In adults with acute leukemia, there is little evidence that one cell type responds better than another.

Although more study is necessary before the ultimate status of mercaptopurine in the treatment of chronic granulocytic (myelogenous, myeloid) leukemia can be ascertained, preliminary reports indicate it to be effective in producing remissions in some cases of this disease. It should not be used unless the response to better-established forms of therapy is poor. Beneficial results have been obtained in the early stages of the disease in some patients who were resistant to other forms of therapy.

Mercaptopurine also has been reported useful in the beginning of the terminal stage of chronic granulocytic leukemia when other measures are no longer effective. The drug is ineffective and contraindicated in the treatment of chronic lymphocytic leukemia, Hodgkin's disease, malignant lymphoma, and solid tumors.

The chief toxic effect of mercaptopurine is depression of bone marrow. Leukopenia appears within 5 to 10 days after initiation of therapy, and, if the dosage is excessive, thrombocytopenia and hypoplasia of the marrow ensue. Nausea, vomiting, or anorexia are indicative of excessive dosage. The drug is less toxic to the mucosa of the gastrointestinal tract than are the folic acid antagonists, but ulceration of the intestinal epithelium can occasionally follow its administration. Although the drug is a purine analogue, it is not possible to antagonize its toxic effects by the administration of adenine or hypoxanthine.

Dosage. Mercaptopurine is administered orally. The usual initial dose for children and adults is 2.5 mg. per Kg. of body weight each day; however, this dosage may have to be reduced in some patients to avoid excessive depression of the bone marrow. If there is no clinical improvement and no definite evidence of leukocyte depression after 4 weeks, the dosage may be cautiously increased up to 5 mg. per Kg. each day. Most hematologists feel that maintenance therapy is indicated during periods of remission in order to prevent early relapse. This is usually accomplished by the administration of 2.5 mg. per Kg. daily; however, it should be emphasized that the dosage of mercaptopurine cannot be empirically defined but varies from patient to patient. Clinical improvement and hematological response must be relied upon as guides to dosage. Blood cell counts should be taken at intervals not to exceed one week, preferably more often, during and after therapy.

PHENSUXIMIDE; Milontin (Parke, Davis); N-Methyl - α - phenylsuccinimide.

Actions and Uses. Phensuximide, an anticonvulsant succinimide compound, differs chemically from barbituric acid, hydantoin or oxazolidine derivatives, and phenacemide. It antagonizes experimentally induced pentylenetetrazol convulsions in rats. Clinically, the drug is primarily useful in the treatment of petit mal epilepsy, but it is less effective and less potent than trimethadione and less active against mixed forms of petit mal; however, phensuximide is considered a useful addition to the armamentarium of antiepileptic drugs and may be used

Upjohn

best-seller for 28 years!

Cheracol*

Each fluidounce contains:

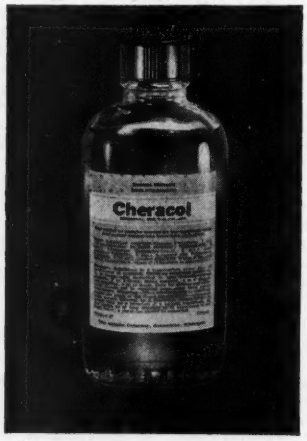
Codeine phosphate . . . . . 1 gr.
Chloroform . . . . . 2 grs.
Potassium guaiacolsulfonate 8 grs.
Ammonium chloride . . . . . 8 grs.
Antimony and potassium tartrate . . . . . 1/12 gr.
Alcohol 3%
With white pine and wild cherry bark

Supplied:

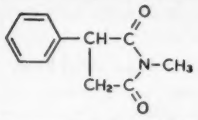
Bottles of 2 and 4 fl. ozs., pint, and gallon

*Trademark, Reg. U. S. Pat. Off.

The Upjohn Company, Kalamazoo, Mich.



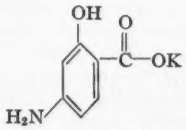
as the initial treatment of unmixed petit mal seizures.



Phensuximide appears to be relatively free from serious toxic effects, but it may produce such side-reactions as nausea, vomiting, muscular weakness, drowsiness, and occasional skin eruptions. Hematopoietic or serious neurological complications have not been encountered. Microscopic hematuria observed in some patients has not been shown to be caused by phensuximide therapy; however, further observations are needed before its toxicity in comparison with other anticonvulsants can be conclusively established. Until longer experience has been gained, periodic blood and urine studies are advisable in patients taking the drug for a prolonged period.

Dosage. Phensuximide is administered orally. The usual oral dosage, irrespective of age, is 0.5 to 1 Gm. two or three times daily (total daily amount of 1 to 3 Gm.). Individualization of the dosage is required to elicit optimum response.

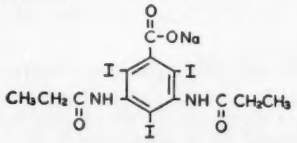
POTASSIUM AMINOSALICYLATE; Paskalium (Glenwood); **Paskate** (Lilly); The potassium salt of aminosalicylic acid.



Actions and Uses. Potassium aminosalicylate shares the action and use of the parent drug, aminosalicylic acid, and its other salts in the chemotherapy of tuberculosis. (See the monograph on aminosalicyclic acid in N.N.R.) There is some evidence that the potassium salt may cause less gastric intolerance than the acid or sodium salt. It can be used in place of the sodium salt for patients required to restrict their sodium intake, but otherwise is subject to the same precautions and side-effects.

Dosage. Potassium aminosalicylate is administered orally. The average dosage for adults is 12 Gm. daily in three or four divided doses.

SODIUM DIPROTRIZOATE; Miokon sodium (Mallinckrodt); Sodium 3,5-dipropionamido-2,4,6-triiodobenzoate.



Actions and Uses. Sodium diprotrizoate is employed as a contrast medium for intravenous (excretory) urography. The drug is transported rapidly to the kidneys and accumulates in the urine shortly after administration. For this reason, roentgenographic exposures are best made 5, 10, and 15 minutes after intravenous injection. When excretion is delayed by impaired renal function, it may be necessary to wait 30 minutes or longer before adequate roentgenographic shadows can be obtained. The density of the shadows is also influenced by the plasma iodine content and the concentration of the urine at the time of examination; thus, careful timing of exposures and restriction of preexamination fluid intake is necessary for satisfactory pyelograms.

Side-effects of sodium diprotrizoate are similar to those produced by other contrast media of this type. The incidence of all types of reactions has been reported by various investigators to be between 10 and 15%. (See the general statement on water-soluble organic iodine compounds for roentgenography in N.N.R.)

Dosage. For excretory urography, 20 to 30 cc. of a 50% solution is the usual intravenous dose for adults. A slow rate of injection (3 to 4 min.) has been observed to decrease the incidence of side-effects. Before the full amount is injected, a "test dose" of about 1 cc. should be administered intravenously and the patient observed for signs of untoward reactions. Since aqueous solutions of sodium diprotrizoate are photosensitive, the drug should not be used after prolonged exposure to daylight.

Supplemental Statement

◆**Additional Uses of Methylbenzethonium Chloride.** The Council previously recognized the use of this nonvolatile, antibacterial agent for making a 1:25,000 diaper rinse in the prevention of ammonia dermatitis (diaper rash) in infants. The Council has concluded that the use of this compound for rinsing diapers or garments and for topical application is justified in the prophylaxis as well as in the treatment of dermatitis caused by the bacterial break-down of ammonia in the urine of infants and incontinent adults. Sufficient evidence is also available to warrant its use for treatment of miliaria (prickly heat) and erythema intertrigo (chafing) caused by perspiration and stool contamination. For topical application, an ointment containing 1 mg. per gram or a 0.055% dusting powder may be applied *ad libitum* to the skin of the genitalia, rectum, thighs, and intertriginous areas.

Our Very Best Wishes at Christmastime

THE AMERICAN DRUGGISTS' INSURANCE COMPANY

Cincinnati 2, Ohio

℞ information service

Members of the American Pharmaceutical Association are invited to submit their professional problems to The Journal, 2215 Constitution Ave., N. W., Washington 7, D. C. Inquiries should include all pertinent details.

Bentonite and Stearate Suspension

The following product becomes thicker on standing. Could this be due to our procedure?--P.D., Pennsylvania.

Bentonite magma	*1280 cc.*
Zinc oxide	*160 Gm.*
Stearic acid	*160 Gm.*
Triethanolamine	*40 Gm.*
Purified water q.s. ad	*4000 cc.*

Mix the 2 powders with the magma. Add the triethanolamine and mix well until a heavy, viscous preparation results. Add the water and put on homogenizer for 10 minutes.

Assuming that the formula has given satisfactory results before, admixture of the stearic acid with the zinc oxide and the bentonite magma could alter the rate of reaction between the acid and the triethanolamine. A preferable procedure would be to melt the stearic acid, add the triethanolamine and stir to complete the formation of the emulsifying agent, triethanolamine stearate, then add the mixed zinc oxide, bentonite magma, and most of the water. Since different batches of bentonite will yield magmas with different thickening characteristics, the mixture could be homogenized and adjusted to the desired viscosity by further addition of water, then mixing and homogenizing again. After preparing a number of batches you could estimate how much more water to add to obtain the desired viscosity before homogenizing. The viscosity of the suspension should be more stable by this procedure, and if it is too thick the amount of the magma could be reduced.

Castor Oil in 25% Alcohol

Please advise of a procedure for combining castor oil with 25% alcohol in a hair dressing that will not separate on standing.—M. F., Nebraska.

The following yielded a uniform dispersion:

Castor oil	3 cc.
Polysorbate 80	10 Gm.
Alcohol 96%	25 cc.
Perfume *q. s.*	
Water *q. s. ad*	100 cc.

Mix thoroughly the polysorbate 80, the perfume (oil) and the castor oil, and add about half the water in small portions with moderate agitation. Mix the alcohol with the calculated remainder of the water and add this to the oil dispersion slowly with moderate agitation.

Paraoxybenzoic Acid Ethyl Ester

The compound paraoxybenzoic acid ethyl ester was included in an ointment prescription. Where can I get it?—S. M. E., North Dakota.

The common name for the compound is ethyl parahydroxybenzoate which is available from chemical supply houses. It is the ethyl ester in the series of antiseptics derived from *p*-hydroxybenzoic acid. The methyl and propyl esters are official as methylparaben and propylparaben.

Plaquenil Tablets

Where can the Plaquenil tablets mentioned in an article in J. Am. Med. Assoc., Sept. 1956, be obtained? —R. B. J., Nebraska.

The drug Plaquenil is available at present only for clinical studies. For this purpose, it can be obtained from the Department of Medical Research, Winthrop Laboratories. This product has just been released for distribution by Winthrop Laboratories. It will appear as a New Prescription Products item in the next issue.

Savatan Capsules—Legend Drug

Could you tell me why FDA prosecuted a pharmacist for selling Savatan without a prescription? See This Journal, **17,** *276(May 1956).—W. P., Oregon.*

The package of Savatan involved in the FDA action was labeled to indicate its content of apiol and bore the caution against sale without a prescription. If an old package does not contain the caution on the label, mark it so that no one will sell it without a prescription.

Sodium Acetate in Ophthalmic Solutions

How can sodium acetate be used in ophthalmic solutions?—A. F., New Jersey.

Sodium acetate is generally used as a buffer in ophthalmic solutions. It should not be used without proper equipment to determine the pH of the solution, because different batches of sodium acetate can give solutions varying in pH from 6.5 to about 9, depending upon the age and storage conditions of the salt. A buffer mixture (pH 6.1) containing sodium acetate, 0.06 mole, and acetic acid, 0.0166 mole, is used in a silver nitrate ophthalmic solution. See J.A.PH.A., *Sci. Ed.*, **44,** 25(Jan. 1955).

Sulfur, Salicylic Acid, and Phenol Lotion

Please recommend a compounding procedure that would retard the separation of the solids in the following prescription.—J. W. L., California.

Phenol	*1.2*
Salicylic acid	*6.0*
Glycerin	*24.0*
Sulfur, pptd.	*12.0*
Bay oil	*8.5*
Isopropyl alochol 90%	*q.s. 4 oz.*

The large amount of sulfur is difficult to keep in suspension. This might be overcome by use of a colloidal sulfur preparation such as Bensulfoid (Polythress), which contains one part of sulfur and two parts of bentonite, to replace part of the precipitated sulfur.

PFIZERGRAM

Pfizer

NEW PRODUCT SCOOP! PFIZER ENTERS CARDIOVASCULAR FIELD OF THERAPY= MODERIL—A NEW, SAFER ALKALOID OF RAUWOLFIA=MODERIL UNWINDS PATIENTS GENTLY=IMPROVED TRANQUILIZING ANTI-HYPERTENSIVE=BETTER TOLERATED IN SHORT- AND LONG-TERM TREATMENT=LONG-TERM REPEAT Rx BUSINESS ON MODERIL WILL WIND UP YOUR CASH REGISTER

MODERIL*

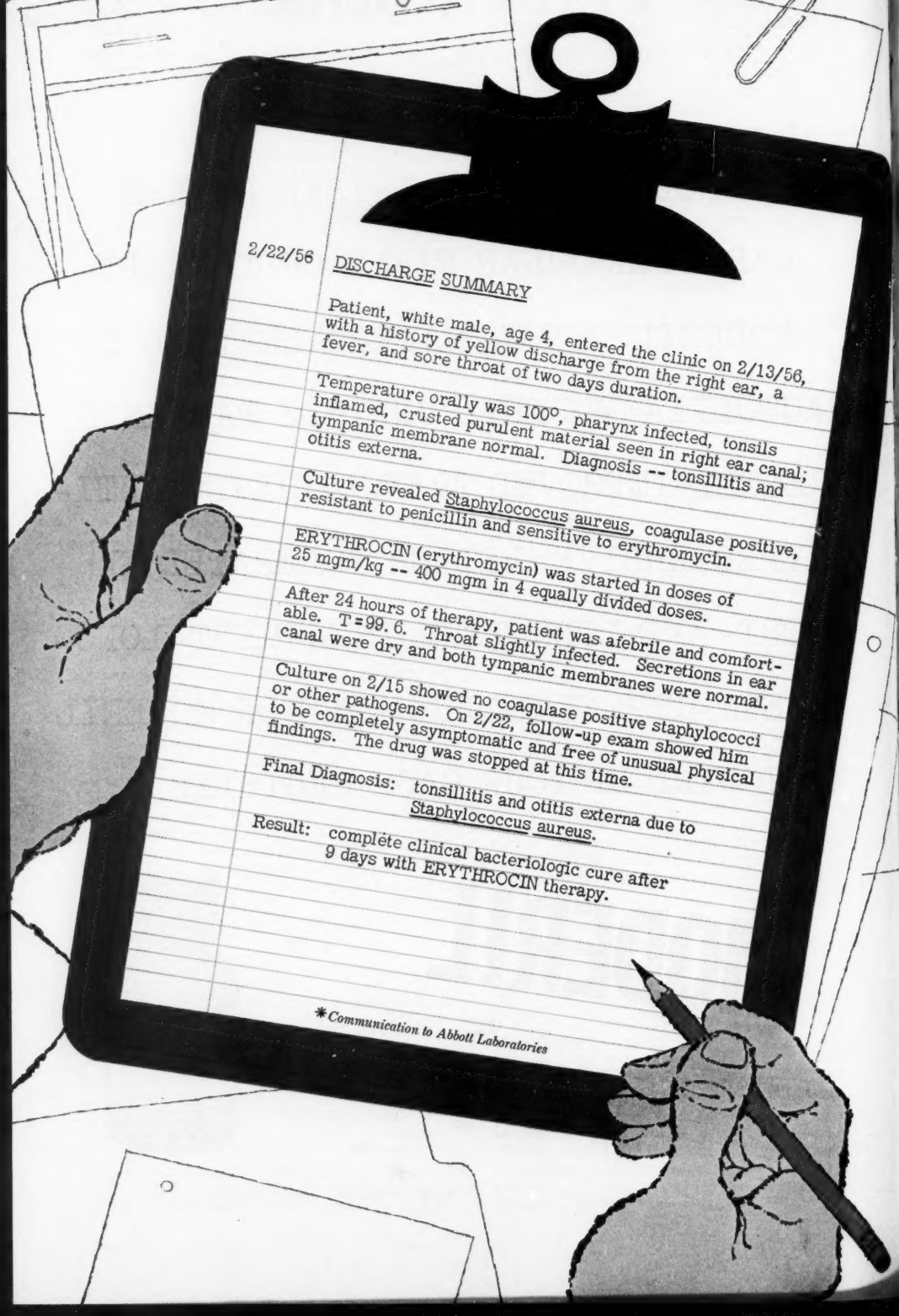
BRAND OF RESCINNAMINE

Supplied	Product No.	Price to Pharmacy	Suggested Retail Price
MODERIL TABLETS 0.25 mg., oval, scored, yellow bottles of 100, bottles of 500	2818 2820	$ 4.72 21.63	$ 7.87 36.05
MODERIL TABLETS 0.50 mg., oval, scored, salmon bottles of 100	2822	6.60	11.00

*Trademark

PFIZER LABORATORIES, *Division, Chas. Pfizer & Co., Inc.*, Brooklyn 6, N. Y.

Erythrocin in treating tonsillitis and otitis externa*



2/22/56

DISCHARGE SUMMARY

Patient, white male, age 4, entered the clinic on 2/13/56, with a history of yellow discharge from the right ear, a fever, and sore throat of two days duration.

Temperature orally was 100°, pharynx infected, tonsils inflamed, crusted purulent material seen in right ear canal; tympanic membrane normal. Diagnosis -- tonsillitis and otitis externa.

Culture revealed Staphylococcus aureus, coagulase positive, resistant to penicillin and sensitive to erythromycin.

ERYTHROCIN (erythromycin) was started in doses of 25 mgm/kg -- 400 mgm in 4 equally divided doses.

After 24 hours of therapy, patient was afebrile and comfortable. T=99.6. Throat slightly infected. Secretions in ear canal were dry and both tympanic membranes were normal.

Culture on 2/15 showed no coagulase positive staphylococci or other pathogens. On 2/22, follow-up exam showed him to be completely asymptomatic and free of unusual physical findings. The drug was stopped at this time.

Final Diagnosis: tonsillitis and otitis externa due to Staphylococcus aureus.

Result: complete clinical bacteriologic cure after 9 days with ERYTHROCIN therapy.

*Communication to Abbott Laboratories

"clinical response good or excellent"

In one recent study, 18 patients with acute follicular tonsillitis and septic sore throat, were given erythromycin. Infecting organism was *Str. pyogenes*. The investigator stated, *"In all 18, the clinical response could be regarded as either good or excellent."*[1]

This, of course, is only one of many reports showing the effectiveness of ERYTHROCIN against coccic infections. You'll get the same good results (nearly 100% in common, bacterial respiratory infections) when you prescribe *Filmtab* ERYTHROCIN.

"toxicity lower in erythromycin-treated patients"

After a study of 208 patients treated with erythromycin (78), procaine penicillin (78) and a placebo (52), the investigator stated: ". . . *the incidence of toxicity* (compared to procaine penicillin) *was significantly lower in the erythromycin-treated patients.*"[1]

Actually, ERYTHROCIN stands on a remarkable record of safety. After four years, there's not a single report of a severe or fatal reaction attributable to erythromycin. Also, allergic reactions rarely occur. *Filmtab* ERYTHROCIN Stearate (100 and 250 mg.), is available in bottles of 25 and 100, at all pharmacies.

Abbott

® Filmtab—Film sealed tablets, Abbott; pat. applied for.

1. Herrell, W. E., Erythromycin, Antibiotics Monographs, No. 1, p. 29, New York, Medical Encyclopedia, Inc., 1955. *Idem* p. 30.

filmtab

Erythrocin® STEARATE

(Erythromycin Stearate, Abbott)

611243

NEW Prescription Products

All items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information at the same time, or even before, products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Practical Pharmacy Edition, Journal of the American Pharmaceutical Association, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Dilantin Sodium, 250-mg. Steri-Vial

Description: One vial containing 250 mg. diphenylhydantoin sodium with one 5-cc. ampul of solvent containing propylene glycol 40% and alcohol 10% in water for injection.

Indications: Treatment of status epilepticus and control of seizures in neurosurgery.

Administration: For status epilepticus, 150 to 250 mg., i.v. For prophylactic control of seizures in neurosurgery, 100 to 200 mg., i.m., 3 or 4 times during 24 hours.

Form Supplied: One Steri-Vial in each carton, supplied from Detroit only.

Source: Parke, Davis & Company, Detroit, Mich.

Estan Tablets

Description: Scored tablets containing, in each: dienestrol, 0.25 mg., and methyltestosterone, 5 mg.

Indications: For use in estrogen and androgen therapy.

Administration: For supression of lactation, 3 tablets 3 times daily for 2 days, 2 tablets 3 times daily for the next 2 days, then 1 tablet 3 times for 1 day; for menopausal syndrome, 1 or 2 tablets daily (follow 21 days of treatment with 7–10 days of rest); for male climacteric, 1 or 2 tablets daily; for dysmenorrhea, 2 tablets 3 times daily for 6 days preceding time of ovulation; for osteoporosis, malnutrition, or senescence, 1 or 2 tablets 3 times daily for 1–2 months, then 1 or 2 tablets per day.

Form Supplied: Bottles of 30 and 100.

Source: White Laboratories, Inc., Kenilworth, N.J.

Mobisyl Tablets

Description: Each mottled pink, A-marked tablet contains: aspirin, 4 gr.; PABA, 4 gr.; ascorbic acid $^3/_8$ gr.; physostigmine salicylate, $^1/_{250}$ gr.; homatropine methylbromide, $^1/_{120}$ gr.

Indications: Analgesic-spasmolytic for relief of pain and skeletal muscle spasm, particularly in arthritic conditions.

Administration: Two tablets 4 times daily, before meals and at bedtime.

Form Supplied: Bottles of 100 and 1,000.

Source: B. F. Ascher & Co., Inc., Kansas City, Mo.

Moderil Tablets

Description: Oval tablets containing 0.25 mg. rescinnamine in each scored yellow tablet and 0.50 mg. rescinnamine in each scored salmon tablet. Rescinnamine (Moderil) is an alkaloid of Rauwolfia.

Indications: A tranquilizing antihypertensive for cardiovascular therapy.

Administration: As determined by the physician to suit the individual patient.

Form Supplied: Tablets 0.25 mg. (yellow) in bottles of 100 and 500. Tablets 0.50 mg. (salmon) in bottles of 100.

Source: Pfizer Laboratories, Brooklyn, N.Y. (See page 821).

Nilevar Tablets

Description: Each uncoated tablet contains 10 mg. of norethandrolone, 17-alpha-ethyl-17-hydroxy-19-nor-4-androsten-3-one (Nilevar).

Indications: A steroid primarily anabolic for protein synthesis with about $^1/_{10}$ the effect exerted by steroid androgens. Useful in preparation for and recovery from surgery; supportive treatment in serious illness affecting tissues; decubitus ulcers; care of premature infants.

Administration: Orally, 30 to 50 mg. daily; children, 1 to 1.5 mg./Kg. body weight daily. Dosage adjusted to individual response.

Form Supplied: Bottles of 50 tablets.

Source: G. D. Searle & Co., Chicago, Ill.

Pen-Vee Sulfas Tablets

Description: Scored tablets containing, in each: penicillin V, 90 mg. (150,000 u.); sulfadiazine, 250 mg.; sulfamerazine, 250 mg.

Indications: For mixed infections or before complete bacteriological identification.

Administration: Adults and children over 12, initially 4 tablets then 2 every 6 hours. Children 6 to 12, initially 2 tablets then 1 every 6 hours. For infants and young children Pen-Vee Sulfas suspension is recommended.

Form Supplied: Bottles of 36 tablets.

Source: Wyeth Laboratories, Philadelphia, Pa.

Seco-Synatan Tabules

Description: Each gelatin-coated tablet contains Synatan (tanphetamin, *d*-amphetamine tannate), 17.5 mg., and secobarbital, 35 mg.

Indications: For symptomatic control of anxiety, depression, or obesity.

Administration: One or two tablets at 10 A.M. for 10–12 hour effect.

Form Supplied: Bottles of 50 and 500.

Source: Irwin-Neisler and Company, Decatur, Ill.

Synalgos Capsules

Description: Each maroon and gray capsule contains: promethazine HCl, 6.25 mg.; acetylsalicylic acid, 3 gr.; phenacetin, 2.5 gr.; and mephentermine sulfate, 7.5 mg.

A new outstanding therapeutic agent discovered and developed by Pfizer scientists to meet the problem of resistant staphylococci and to control superinfection with these strains.

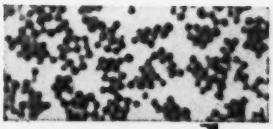
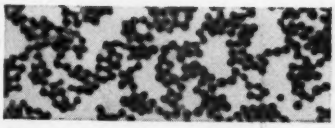
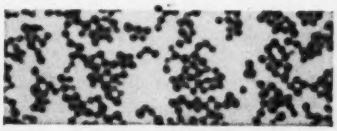
Matromycin has been shown to be outstandingly effective against antibiotic-resistant fresh clinical isolates of *M. pyogenes*.[1] Marked susceptibility of most erythromycin-resistant strains of staphylococci, particularly fresh clinical isolates, indicates no predictable cross-resistance with erythromycin. This is also true for tetracycline, oxytetracycline, chlortetracycline, penicillin and streptomycin.[2] Effectiveness of Matromycin against antibiotic-resistant strains is complemented by the fact that resistance to Matromycin itself does not readily occur.[1] Clinical trials reveal Matromycin to be both effective and well tolerated when employed against infections due to susceptible organisms.[2]

Capsules, 250 mg.; bottles of 16.

1. Noyes, H. E.; Nagle, S. C., Jr.; Sanford, J. P., and Robbins, M. L.: Antibiotics & Chemother. *6*:450 (July) 1956. 2. Ross, S.: Antibiotics Annual 1955-1956, New York, Medical Encyclopedia, Inc., 1956, p. 600.

Matromycin®

BRAND OF OLEANDOMYCIN

when sensitivity   testing reveals infection due to resistant staphylococci 

Pfizer PFIZER LABORATORIES, Brooklyn 6, N.Y.
Division, Chas. Pfizer & Co., Inc.

Indications: For relief of headaches of emotional origin accompanied by anxiety and depression, and as an analgesic-relaxant in dysmenorrhea, arthralgia, myalgia, neuralgia, discomfort accompanying colds and allergies.

Administration: Two capsules initially, then 1 or 2 capsules 2 or 3 times daily.

Form Supplied: Bottles of 48.

Source: Ives-Cameron Company, Philadelphia, Pa.

Trexinet Tablets

Description: Each blue, sugar-coated tablet contains 1 mg. naturally occurring, water-soluble, estrogenic substance (equine), calculated as sodium estrone sulfate, and 250 units lututrin (Lutrexin).

Indications: For treatment of disturbing symptoms associated with the menopausal syndrome.

Administration: One tablet once or twice daily. Maintenance dosage, 1 tablet every other day or 2 tablets a week for 3 weeks, followed by a rest period of 4 or 5 days.

Form Supplied: Bottles of 50.

Source: Hynson, Westcott & Dunning, Inc., Baltimore, Md.

Triaminic Tablets

Description: Each tablet contains: pyrilamine maleate, 25 mg.; prophenpyridamine maleate, 25 mg.; and phenylpropanolamine HCl, 50 mg., with half the amounts in a quick-release outer layer and the other half in the slow-release inner core.

Indications: For relief of nasal congestion due to colds and nasal allergies.

Administration: One tablet at breakfast, mid-afternoon, and, if necessary, before retiring.

Form Supplied: Bottles of 50 tablets.

Source: Smith-Dorsey, Lincoln, Nebr.

Uriplex Tablets

Description: Each tablet contains: phenylazodiaminopyridine HCl, 50 mg.; sulfacetamide, 250 mg.; methscopolamine nitrate, 1 mg.

Indications: For treatment of urinary tract infections.

Administration: Two tablets 4 times daily, before meals and at bedtime.

Form Supplied: Bottles of 100.

Source: Lloyd, Dabney & Westerfield, Inc., Cincinnati, Ohio.

Other New Products

(Including chemicals, clinical trial drugs, diagnostic aids, and equipment for the retail and hospital pharmacy.)

Almethine Duracap Capsules—Name Change

Meyer and Company has changed the name of their capsules containing methscopolamine bromide, 5 mg., and mephobarbital, 50 mg., to Almethine with Mephobarbital.

Bioflavonoid with Vitamin C Tablets

Tablets containing, in each, citrus bioflavonoid complex, 100 mg., and vitamin C, 100 mg., are marketed by *Sutliff & Case Co., Inc.*, as a dietary supplement to improve capillary resistance. Dosage is 2 tablets orally 2 or 3 times daily. Supplied in bottles of 100 and 1,000.

Clinistix—New Packages

Clinistix for urine sugar test is now marketed by *Ames Company, Inc.*, in a metallo-plastic hermetically sealed pouch containing 1 packet of 30 strips and in bottles of 60 strips. The unpouched packets of 30 strips will be exchanged for the new foil package form by Ames.

Consolets Troches

Flavored troches containing narcotine, Decapryn (doxylamine), and terpin hydrate are marketed by *The Wm. S. Merrell Company* for relief of cough. Dosage: adults and children over 12, 1 or 2 troches; children 6 to 12 years, 1 troche. Supplied in boxes of 24 as 6 foil strips of 4 troches each. The drug combination is available also as Consol thixotropic suspension in bottles of 4 and 16 ounces.

Dayamineral Filmtab—Formerly Maxilets

Tablets containing 10 vitamins and 9 minerals and trace elements, formerly called Maxilets tablets, are now marketed by *Abbott Laboratories* as Dayamineral Filmtab tablets in bottles of 100, 250, and 1,000.

Derifil Tablets

Tablets containing, in each 100 mg. of water-soluble chlorophyllins are marketed by *Rystan Company* for the control of colostomy or ileostomy odors or other odor conditions. Dosage is one or more tablets daily, orally or in the appliance. Available in bottles of 30 and 100 tablets.

Dorbantyl Capsules

Orange and black capsules containing, in each: dioctyl sodium sulfosuccinate, 50 mg., and Dorbane (1,8-dihydroxyanthraquinone), 25 mg., have been marketed by *Schenley Laboratories, Inc.*, for softening, bulking and expulsion of the stool in acute or chronic constipation. Dosage is 2 capsules at bedtime, repeated if necessary; children 3 to 12 years, 1 or 2 capsules. Available in bottles of 30 and 250.

Gamophen Surgical Soap

A soap containing hexachlorophene 2% and lanolin 4% in an anhydrous base is marketed by *Ethicon Inc.* The soap is now available in a new large 4½-oz. bar. This bland product lathers well in hard water but lasts longer than ordinary soaps. It exerts a prolonged antibacterial action and serves as an effective adjunctive and prophylactic measure in diaper rash, cradle cap, and a variety of other dermatoses.

Hydrozets Troches

Fruit-flavored, yellow, candy-base lozenges containing hydrocortisone, zinc bacitracin, tyrothricin, neomycin sulfate, and benzocaine are marketed by *Merck Sharp & Dohme* for the treatment of mouth and throat infections and for the suppression of inflammation resulting from infection or trauma. Available as individually gold foil wrapped troches in vials of 12.

Paracodin Bitartrate Ampuls

The parenteral solution of Paracodin bitartrate marketed by *Bilhuber-Knoll* contains 30 mg. of dihydrocodeine bitartrate in each cc. and is supplied as 1-cc. ampuls, in 6's and 100's. The 10-mg. tablets are supplied in bottles of 100. (See THIS JOURNAL, **17**, 612, Sept. 1956, for additional information.)

p. 827-840 bound at front of vol.

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